

The Mining Journal

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Horns of the U.S. Lead-Zinc Dilemma

THE hearing by the American Tariff Commission of the case for an extension of protection to the domestic lead-zinc industry has finished. The Commission is considering the submissions and will report—it is being said—early in the New Year. The Commission can recommend a tariff increase if a majority of its members so wish; the President may accept, reject or modify its recommendation. What are the issues the Commission will have to weigh? Before considering them it is worth looking at the international setting of the Commission's work.

Dominating all are sputniks and the forthcoming meeting of NATO at ministerial level. Talking this week of the situation the powerful Sam Rayburn, Speaker of the House, said that the sputniks and their consequences would dominate the coming Congress. But—and this is the important fact—he said in the next sentence that all free nations were now in the same boat and the United Nations must do all in its power to help them. Extension of the reciprocal trade agreements was "vital to the welfare of the United States and its allies".

That is the setting. Pre-sputnik, the lead-zinc industry's case looked as if it would be a walk-over; it is still likely that the Commission will look kindly on it; but if the President is really going to rally the Free World to face up to sputniks, can he at the same time sell it down the river for the sake of the American lead-zinc industry? And if he refuses protection, what chance will he have of pushing through the Reciprocal Trade Agreements Act?

The case of the industry was put by Mr. Schwab, Chairman of the Emergency Lead-Zinc Committee. He wanted the power to raise tariffs strengthened so that the maximum for lead would be raised from 1½ c. per lb. to 2.55 c. for lead, and from 7/10 c. per lb. to 2.1 c. for zinc. He also demanded import quotas but admitted that the industry was not unanimous in wanting them. Clearly, agreement was only reached within the industry by placing the demand for quotas as subsidiary to that for higher tariffs and by allowing particular firms to give independent evidence.

Roughly, the split in the industry was between those with major mining, and those with major smelting, interests. Mr. Andrew Fletcher, President, St. Joseph Lead Co., supported the Emergency Committee without reservations and, indeed, went on to say that St. Joseph Lead needed a domestic price of 17 c. for lead if it was to maintain its development programme. On the other hand Mr. Howard Young, President, American Zinc-Lead and Smelting Co., though arguing that the maximum that the Commission could raise the tariff was not enough, urged that import quotas would demoralize the Free World market, harm neighbours like Canada and Mexico and—incidentally—render 50 per cent of American smelting operations unprofitable. Different again were the views of Mr. Simon Strauss, Vice-President, American Smelting and Refining, who said that the quota system was "one of the most dangerous courses of action that the Tariff Commission could

take". But Mr. Strauss also refused to support the demand for higher tariffs. He considered that even if higher tariffs were granted, prices would only be 15 c. for lead and 12.50 c. for zinc. So that, on his reckoning, St. Joseph was in for a difficult time in any case.

Even less co-operative than the smelters were the die casters and the brass interests. Mr. David Laine, secretary, American Die Casting Institute, opposed both quotas and higher tariffs. He preferred "proper planning and production discipline. . . . Quotas and tariffs would be a signal to buyers to design away from zinc for the future. In the long run it will assure only a decreasing market for zinc. . . . Unlike other industries the zinc industry has spent little or none of its earnings in fundamental research. Nothing has been attempted to make it more useful, more economical, more readily finished, or more attractive to present or potential users". (A damning indictment, this, in these times when research is so respectable.) Mr. Howard Velfort, Copper and Brass Research Association, did not directly intervene in the application but asked that if a tariff increase were recommended it should be applied in such a way as to cover the zinc imported in brass products; otherwise the brass industry would be penalized in competing for the domestic market. The Commission decided that this request could not be considered — but the argument will not go unnoticed by those who appreciate the anomalies which restrictive practices tend to create.

Most protectionist of all was the International Union of Mine, Mill and Smelter Workers. It wanted a higher tariff and a quota system that would give preference to those countries with wage rates most near to American levels. (This would offer a sop to the Canadian mines where the union has a fair membership.)

The views of foreign suppliers were ably put by Mr. Robert P. Koenig, president of the Cerro de Pasco Corporation and by Canadian, Bolivian and Peruvian producers. Mr. Koenig described the proposal for higher tariffs as prejudicial to U.S. relations with friendly nations who depend upon dollar earnings from lead-zinc imports to "raise their standard of living and thus stamp out stomach communism". He pointed out that mine production of lead and zinc in Peru accounted for 4.5 per cent of the country's gross national product, whereas the domestic industry accounted for only 0.064 per cent of the U.S. gross national product.

Recalling the forecast in the Paley Report that by 1975 the U.S. would be dependent on importing 800,000 tons of its requirements of lead and 900,000 tons of its requirements of zinc, Mr. Koenig also pointed out that, whatever the level of artificial stimulation afforded the domestic lead-zinc industry, it must necessarily import a significant portion of its requirements of these metals.

Sr. Reno Quiroga Rico, representing the National Association of Medium-Class Miners and the National Chamber of Mining of Bolivia, said he viewed with alarm the proposed increase in tariffs. Recently declining prices for the metals had closed down many Bolivian mines; if a tariff increase were granted, it would mean that Bolivian production could not find a market. For Bolivia, the increase would mean the loss of an extremely important item of income in foreign currency at a time when the process of monetary stabilization, which relies appreciably on aid from the U.S., fundamentally required an increase in production.

Senator Edgardo Portaro, chief executive of the Compania Minera Altacocja, pointed out that a higher lead-zinc tariff would place an additional burden on Peru's already unfavourable trade balance with the U.S. Figures for the first half of 1957 disclosed that Peru bought \$2

worth of goods from the U.S. for every \$1 of commodities sold in return. "All of us who are interested in lead and zinc would like to see more of these metals used," he added. "Surely it is not the best way to increase consumption by artificially increasing the price, or imposing quotas in the largest market of all, the United States."

Mr. H. I. Altshuler, an independent mining engineer, told the Commission that the efforts of U.S. companies operating in South America could be destroyed by the granting of higher duties.

Mr. Robert Hendricks, vice-president of the Consolidated Mining and Smelting Co. of Canada Ltd., stressed the favourable long-term outlook for lead and zinc and maintained that only by co-operative research and sales development could the industry create new and broader markets for its products, thus "breaking the shackles of perpetual government aid and interference and forging with its own hands, its own bright future".

How to drag a policy out of this mass of conflicting views? This is hardly the time for making guesses that will be proved or disproved in a matter of weeks. But it is worth drawing attention to the arguments against higher tariffs lest it should be thought that the lead-zinc industry had it all its own way. It must also be admitted that since the Commission urged the higher tariff in 1953 and since the President accepted the need for protection when he started stockpiling, the chances must be that the Commission will recommend a bigger tariff and the President, now that he is cutting stockpiling, will be under a moral obligation to accept it. But then we recall Sputnik, and the need to rally, not to undermine, America's allies. Mr. Eisenhower is in a spot.

MINING IN BURMA'S DEVELOPMENT PLAN

Burma is not yet a planned economy, states a survey prepared by the British Embassy in Rangoon ("Economic and Commercial Conditions in Burma," H.M.S.O., price 4s., by post 4s. 7½d.). It is, however, a country to which planning is being applied with much determination.

The objective of the "Pyidawtha"—the development plan—is that by 1959-60 the inhabitants of Burma shall be producing nearly one-third more than they were just before the war. Due to a heavy fall in the export price of rice, however, some projects requiring heavy expenditure of foreign exchange have had to be deferred. Failure to deal with insurgency as rapidly as was hoped has been another unfavourable factor. As a result of these setbacks the 1956-60 production will be far short of the goal. Nevertheless, the very fact that Burma has adopted a comprehensive plan has given a direction and stimulus to her administrators, which can be expected to bring lasting benefits.

In common with the rest of the economy, mineral production suffered heavily as a result of the war and the subsequent insurgency. Demolitions, wasteful mining by the Japanese, and insecurity have drastically reduced the output of all the country's most important minerals. However, progress has been made in the rehabilitation of the mining industry both before and after independence.

"Pyidawtha" originally provided for seven mining projects, of which one has been dropped from the schedule, two had been completed partially or on a reduced scale by January, 1957, and four are under implementation.

The Mineral Resources Development Corporation, responsible to the Ministry of Mines, is in charge of two main projects, a tin and wolfram mine at Yadanabon-Namyen and the development of deposits of sub-

bituminous coal at Kalewa not far from the junction of the Chindwin and Myitha rivers some 500 miles from Rangoon. Production at the Yadanabon mine (formerly known as the Namyen), close to the Thai frontier in the Mergui district, has been handicapped by local insecurity, by the difficulties of the route back into Burma, and by the failure so far to devise a proper working plan for the rich deposits available at the site. Great efforts have been expended on this project, however, and there are prospects of good results.

The short-term plan at Kalewa is to produce 100 tons a day, but it is hoped to raise output after four or five years to 1,000 tons a day or 300,000 tons a year. A British firm of consultants has been engaged to advise on production. These deposits have been known for many years, but have not been exploited because of the relative cheapness and accessibility to the Rangoon area of Pengal coal. Furthermore, special treatment will be necessary before Kalewa coal can be used for certain purposes. One of the many problems involved in dealing with this promising deposit is that of transport, since there is not enough depth in the rivers in the dry weather to permit the movement of coal by water. This project is of great importance to the government's plans for an industrial area in central Burma and for the development of the steel industry, which are based on the assumption that ample supplies of power will be available.

The most valuable minerals to Burma's economy (apart from petroleum) are the lead-zinc-silver group, which come from the ancient and famous mine at Bawdwin in the northern Shan State. This was probably the largest lead mine in the world before the war.

In 1952, in accordance with the government's policy of exploiting mineral resources, a new Burmese company, the Burma Corporation (1951) Ltd., was formed. Joint owners of this in equal shares are the government of the Union of Burma and Burma Mines Ltd. of London. Rehabilitation of the mine is rapidly proceeding. In 1956 production of refined lead, zinc concentrates and refined silver had risen to an extent which enabled the joint venture to show a net profit of £529,500.

The complex of workings known as the Mawchi Mine in the Kayah State was believed before the war to rank first in the world among individual tungsten mines and third among individual tin mines; it produced between 35 and 40 per cent of the tin and tungsten in the country.

The recovery of production has been greatly hampered by the presence of insurgents in the vicinity and by shortages of skilled and underground labour, while the long haul by road from Mawchi to railhead near Taunggyi in the southern Shan State (some 200 miles) adds considerably to transport costs. Nevertheless, production has reached about 30 tons of concentrates a month, though there is still some way to go before costs are covered (particularly in view of the further drop in tungsten prices during the current year), and the best pre-war figure of 500 tons a month can only be attained in the remote future. In this case, too, states the survey, the government of the Union of Burma wishes to take part in a joint venture with the company, and negotiations are still proceeding.

Other tin and wolfram mines are to be found in the Tenasserim Division.

Under an agreement signed on December 7, 1955, the Union Government subscribed 51 per cent of a new joint venture company, of which the remainder is held by the Anglo-Burma Tin Co. The company has a mine at Heinda in the Tavoy district, which is estimated to contain at least 5,600 tons of metallic tin.

Of the other British companies, Tavoy Tin Dredging is

restarting dredging at Theindaw on the Great Tenasserim River and is also mining on a small scale in the Tavoy district; Consolidated Tin Mines of Burma, however, have been denied access to their mines in the Tavoy district because of unsettled conditions and are working through tributaries.

Since the British Embassy finished preparing this review of Burma's economic progress, important developments have taken place. It was recently reported that the government had declared a new policy whereunder the development of the mining industry would be undertaken in three sections: by the state, by joint ventures, and by private enterprise. The State will undertake only those sections of the industry which "cannot be handled by private enterprise," such as the production of coal and iron and the development of minerals in remote places. It has been announced that enterprises will be allowed to function without fear of nationalization and that private mining will receive all-out State support. In order to encourage investment, laws governing the employment of foreign capital are to be revised and tax concessions have been introduced.

There has been much optimism in Burma regarding the prospect of American investment in the mining industry, following a U.S. trade mission earlier in the year and, more recently, a conference held in Washington to discuss possibilities for developing the country's mineral resources.

INDIA'S CHANGING MINERAL POLICY

Relaxation of India's Industrial Policy Resolution, particularly in regard to prospecting and exploitation of minerals, is to be permitted in view of the shortage of foreign exchange.

State Governments are, therefore, being requested to allow private interests to undertake mining in respect of some of the minerals mentioned in Schedule A of the Industrial Policy Resolution, which has placed such minerals as lignite, coal, iron ore, copper, magnesite, manganese, tin and oil in the public sector.

Taking into account the foreign exchange position and the need for promoting exports, the private sector is to be allowed to prospect for and raise minerals, preferably for export.

Before leasing out mineral areas, however, it is to be ascertained whether it would not be an immediate feasibility for the public sector itself to undertake prospecting and mining of those areas.

NO EASY DECISION

Faced with a difficult choice, Mr. Harry Oppenheimer has announced his retirement from politics. This is hardly surprising, having regard to the greatly increased business responsibilities which must fall on his shoulders as a result of his father's death. We understand that his appointment as chairman of both Anglo American and De Beers is likely to be announced very shortly.

By his decision not to stand in the general election, Mr. Oppenheimer will end, at any rate for the time being, a distinguished career in Parliament, where his absence will be a heavy blow to the United Party, of which he was one of the most active and influential members.

Who now will speak for the mining industry in Parliament, as the Oppenheims, between them, have so ably done for more than thirty years?

PUNCHED-CARDS—I

Punched Cards in the Mining Industry

RECORDING by punched holes is acknowledged to be an extremely fast method of recording and the system has other important advantages. The punched hole can never be removed from the card and its position always remains the same; therefore the same information will always be recorded. Being of standard size the cards can be handled by high-speed machines, which will automatically interpret and print the information recorded; selectively sort from a pack of cards one or more cards containing predetermined designating information; reproduce automatically a new set of punched cards from an existing set; or undertake calculations on data which are in punched-card form. Electronic calculators and computers have been developed for operation in conjunction with punched-card systems.

In the administrative offices of mining groups or mines of large and medium size, a considerable number of people are employed in the time office, stores, and statistical and accounting departments, most of them being engaged on purely routine clerical and book-keeping procedures. In recent years many of these procedures have been mechanized, with consequent saving of time and labour, but it may well be that the advantages offered by mechanization offer still further scope for exploitation.

Accounting and book-keeping procedures are usually standard throughout the mines of a group and much of this work could be handled centrally; if, in fact, it has not already been centralized.

There seems to be no practical reason why punched-card equipment, once installed for accountancy and routine control, should not also be used to assist other departments; e.g., for the processing of raw statistical data from sampling.

The flexibility of punched-card systems has been strikingly demonstrated within the mining industry by the wide scope of existing applications, for examples of which we are indebted to The British Tabulating Machine Co., Ltd., and the Powers-Samas Organization.

Statistical Services

The South African gold mining industry receives a fixed price for its product and is, therefore, prevented from passing on to the buyer even a small proportion of increased production costs. Detailed statistics on operating costs, therefore, assume even more than usual significance.

Each mine and each mining group keeps a close statistical control on its own production costs. In the general advancement of the industry as a whole, however, a complete statistical service on the industry's operations is essential. This service is provided by the Transvaal and Orange Free State Chamber of Mines, which uses Hollerith punched-card machines to assist in maintaining a close statistical watch on revenue and expenditure for the South African gold mining industry. Information supplied by the punched cards is used in formulating common policies on such matters as European and African labour and the industry's representations to government bodies.

Every year the Chamber of Mines prepares an annual detailed analysis of all the items that constitute production costs. Apart from providing a comparative analysis of all these items, this information is important in indicating trends in various fields and it should be considered in con-

The advantages arising from the recording of information by means of holes punched in cards have led to the widespread adoption of this procedure in the mining and associated industries for accounting, payroll, stores control and the recording and analysis of the many other operating statistics and costs which are required for the day-to-day control of mining operations.

junction with a companion statistical service—the annual analysis of stores used by the whole industry.

Each month the Chamber of Mines issues production figures showing the number of ounces of gold produced by each of its members. It also analyzes each quarter the working results for the whole industry. This analysis shows, for each of the member gold mines and for the industry, the tons of ore milled, the ounces of gold produced, and the working revenue as a total and also per ton milled. It reports working costs as a total and also per ton milled and per ounce of gold produced. Working profit is shown as a total and as a per ton figure. Working profit from uranium is also indicated. Information on dividends includes the number of shares or stock units issued for each member, the amount of dividends per share or stock unit, and the total dividends declared by each member and by the industry as a whole.

Statistics are maintained in relation to the employment of African labour. The Chamber also provides a mechanized accounting and statistical service for the African Labour organizations. A punched-card for every worker gives such information as the worker's home, his tribe, the method of engagement and a record of various payments. From time to time special surveys are made and information is distributed on such matters as the incidence of particular diseases, the average number of visits a migrant worker pays to the gold mines in his lifetime, the average duration of each stay, and indicated trends in the flow of African labour. Statistical reviews of wages are periodically undertaken.

The mining industry, through the Chamber of Mines, conducts regular safety competitions. The statistical work involved in these competitions is performed by the Chamber and includes the compilation of daily figures on fatality-free shifts worked by the mines.

The statistical services undertaken by the Transvaal and Orange Free State Chamber of Mines are an outstanding illustration of the importance of comprehensive and up-to-date statistical information in industry. This example clearly indicates the value attaching to the employment of punched-card mechanization procedures for its rapid production.

Other Mining Users

Punched-cards are used by West African gold mines for wages and stores accounting and on the Copperbelt for mechanized accounting and statistical services. Among the users in Northern Rhodesia are Rhokana, Nchanga, Roan Antelope, Mufulira and Bancroft. Each of these companies relies on punched-card machines for the recording and analysis of expenditure, production, inventories and plant performance, costing, payroll and statistical services.

In Asia punched-cards are similarly employed by the Burma Corporation, while the East India Coal Co. Ltd. and

Bararee Coke Co. Ltd. have installed mechanical accounting for expenditure, costing and payroll.

Payment of Dividends

Experience has shown that punched-card equipment provides an efficient and economic means of dealing with the basic problem of share registration and dividend payment.

In changing to punched-card methods, the initial problem is to establish the new records without interfering with the functioning of the Registration Department. This has been accomplished by producing, by means of an "Addressograph" machine, a temporary duplicate register on small coloured cards approximately 3 in. by 2 in. To the information printed by the "Addressograph" was added the occupation of the shareholder, the balance of the account, dividend payment instructions and code numbers. These coloured cards were kept up to date simultaneously with the ledgers and it was the information on these cards that was punched into the new records.

A set of cards was punched for each holder comprising Name, Address and Occupation Cards, and a Dividend Card which also provided for a change in the rate of the dividend. A Payment Instruction Card was later punched with the amount in words, if payment was to be made by cheque. If payment was by bank deposit, two cards were punched showing the name of the bank and branch.

As a shareholder changes his address or varies his dividend payment instructions, the advice is checked with the ledgers and the code number appended. From the information in these advices the new cards are punched; the old and new cards are then run through the tabulator and checked.

When transfers of shares are received they are carefully checked with the ledgers and the code number is appended. For "new" buyers a code number is allocated. The transfers are then entered in the Transfer Journal and it is from the Journal that the new cards are punched to enable the ledger accounts to be posted.

A Further Benefit

The real benefit of punched-card methods is felt when dividends are declared payable. The file of Dividend Cards is always kept up to date, showing amount of dividends applicable at the usual interim rate. As soon as the final dividend rate is known, the cards are sorted into amount-of-shares sequence and the new amount of dividend is gang-punched into the field of the card provided for this purpose. The tabulator can then be set to prepare all the required records by selecting from the Dividend Card the appropriate amount of dividend applicable.

Depending on the type of dividend payable (either Preference or Ordinary), a full dividend list is tabulated, showing shareholders' names, amount of dividend payable, amount of shares held, code number and payment instruction code. Having balanced the full list with a control total, the next step is to arrange the cards according to the various types of payment instructions.

As sections of the full list are balanced, the cards are returned to the sorter and all cards relating to cheque payments are sorted over by shareholder code number. The cheques are designed for the sheet feed and are printed in sets of two. The top cheques are numbered consecutively from No. 1, the numbers carrying on consecutively on the bottom cheques. All cheques are tabulated with names and addresses, the top sections being completed before the bottom sections are commenced, and when all

have been completed they are then separated from one another by guillotine.

While printing the cheques, the summary card punch produces a dividend paid card, called "Taxation" Card, for each shareholder. These cards are used to print the Return for the Commissioner of Taxation.

For all shareholders requiring dividends to be paid to their bank accounts, bank deposit slips are printed and forwarded to the respective banks with covering cheques. As in the case of cheques, cards are sorted over shareholder's code and instruction code before printing the deposit slips. This ensures that the cards are separated into their respective banks and are in alphabetical order within each bank.

The system also caters for overseas shareholders who are paid by bank draft, for shareholders whose dividends are paid to trustee companies and for dividends held in suspense.

The preparation of the list dividends paid—lodged yearly with the Commission of Taxation—by means of the punched-cards, has eliminated the laborious task of hand-posting each dividend payment to the shareholders' dividend payment cards, the addition and balancing of these amounts each year, and the combining of totals in cases where shareholders hold more than one class of share.

The annual return is prepared from the Name, Address and Occupation Cards and Dividend Cards in file at the date on which the list is to be furnished.

Malayan Diary

ON October 21, H.H. the Sultan of Kelantan pressed a button which sounded a siren and so gave the signal for the machinery to start in motion on the Oriental Mining Co.'s new iron ore mine at Tremangan, situated within his State. The extraction of iron ore on the site was started in 1937 by a Japanese firm, the Southern Mining Co., but was discontinued during the Second World War.

The new company is financed by British and Japanese capital. Its chairman is Mr. J. L. M. Boyd, who is also a member of the Malayan Board of Boustead and Co. Ltd., an importing and general agency house.

The opening on October 21 was the culmination of two years' preparatory work, during which Japanese experts have installed modern machinery to a value of approximately £1,000,000, all brought in from Japan. Mr. Boyd estimates that when his mine is in full production it will have an output of at least 350,000 tons of iron ore annually.

Tin on Pulau Besar

Rumours that tin mining on the island of Pulau Besar, off the coast of Malacca, was to be discontinued have been denied by Mr. Goh Joon Hoe, managing director of the Pulau Besar Tin Mines Ltd. He states that since the mines opened in June last the yield has been quite satisfactory. Ninety piculs of tin concentrates had been won in the past three months which, at even the low prices ruling, represented an economic proposition.

The mine is worked on the opencast system and is the first mechanically operated mine on the island. When tin was last won on the island in 1926 it was by dulang-washing (panning). Tin was first mined on Pulau Besar over 200 years ago by Bugis natives from neighbouring Indonesian islands.

The Federation's Department of Labour, in its monthly report, states that of 20 columbite mines which started in

North Johore in 1954 when there was a price boom, only seven now remain and they are on a care and maintenance basis.

Federation to Raise M\$200,000,000

The Federation of Malaya's Legislative Council was to be asked on December 4 to approve a Bill to authorize the Treasury to raise M\$200,000,000, by way of a loan, to finance certain public works and other projects.

Amongst the purposes for which the loan is to be raised, scheduled in the Bill, land development and prospecting is allotted M\$10,250,000, geological survey is to receive M\$650,000; and the Mines Department M\$236,000. Other major capital allotments in the development of the country are: M\$1,680,000 to survey; M\$19,386,580 to drainage and irrigation; M\$43,137,000 to roads and bridges; M\$48,894,000 to the Malayan railways and M\$953,000 to ports.

The Supply (1958) Bill will be debated in the Federal Legislative Council at its December meeting. The Bill, released on November 9, discloses that the estimated net Federal expenditure in 1958, to be found out of the consolidated fund, totals M\$714,997,507.

The principal heads of expenditure include the Ministry of Defence, M\$19,459,000; Federation army M\$72,190,645; police M\$140,250,606; education M\$161,696,303; health M\$70,826,362; mines M\$1,318,174 and geological survey M\$1,023,830.

Heavy Floods Cause Losses

Heavy floods in Selangor during the last week of October caused twenty-four gravel pump tin mines to close down around Kuala Lumpur, entailing a loss to the miners and government of about M\$1,000,000, according to a statement made by Mr. J. M. H. O'Reilly, the Senior Inspector of Mines. The area most affected included Kepong, Segambut, Kundang and Ampang. Most of the affected mines were out of action for varying periods of up to a week but it was expected that it would take a month to bring two of the mines back into production. The estimated loss in production is 600 piculs of tin concentrates.

New Treatment Plant

Southern Tronoh Tin Dredging Ltd. states that the returns obtained from their recently-installed small gravity and electrostatic treatment plant have been highly gratifying. Recoveries from the amalg dumps are exceeding expectations. The future life of this company's No. 2 Dredge is dependent on its continued successful extraction of satisfactory values from clay ground. The dredge entered difficult ground early this year and results to date indicate that the clay soil is being properly dealt with.

It is understood that the company is still awaiting official decision on applications for leases over two rubber estates in the Sungkai district. The No. 1 Dredge is being converted from steam to electric drive, as a result of which appreciable operating economies are anticipated. The conversion means that the dredge will be out of production for a total period of three months.

At Tekka Taiping Ltd., when the present dredge run comes to an end—expected to be about mid-1958—future development work will depend upon the result of a new technical survey which is being carried out.

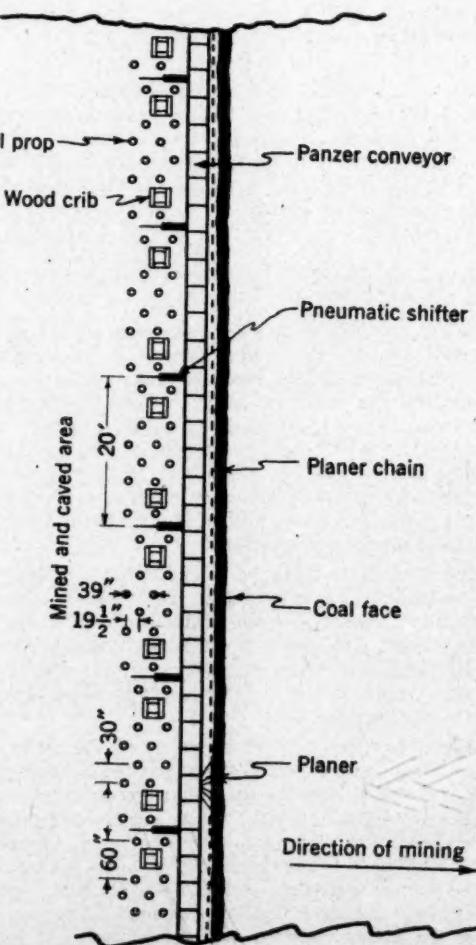
Coal Planers in

622-232-75: 622-273-23 (73)

TWO modified longwall mining plans have been devised for use in planer mining in the United States, with faces 300 to 460 ft. in length. In one plan, the block of coal to be mined is developed by driving sets of 3 to 5 entries to a given length on each side of the block to be mined. Each subsequent adjacent block would require entries to be driven on one side only because one set used in mining the previous block could be used. The inby ends of the entries adjacent to the block are connected by parallel rooms. The block so developed is mined on the retreat, commencing in outby connecting room. In this plan the development is completed before the longwall face is retreated.

Plan for Advancing

The plan devised for advancing has the advantage of eliminating the necessity of completing the development before mining of the longwall face is begun. If the bed is dipping and the main haulage entry is downdip from the block of coal to be mined, water on the face would drain away from the face into the gob and prevent an accumulation at the working face. In this plan the entries are driven in coal and kept at least two crosscuts ahead of the longwall face, which is mined on advance also. Although the system



U.S. Modified Longwall Mining

In "Report of Investigations 5355", the U.S. Bureau of Mines describes an investigation to develop and improve mining methods for mining thin coal beds, to increase productivity, and to increase the recovery of coal. German coal planers and a modified longwall system were introduced into American mines and are reported to be promoting increased productivity and better recovery as compared with conventional methods. The following article, compiled from Report 5355, describes these operations at certain mines in the United States

is a form of advancing longwall, it differs from true advancing longwall in that entries are maintained in coal rather than through gob by means of packwalls.

Briefly, the planer unit is a continuous-mining machine that mines coal from a solid face, loads the coal onto the face conveyor with a ploughing action, and transports the coal to another conveyor in the entry. The coal-planer unit consists of an armoured double-chain (panzer) conveyor that rests on the mine floor and extends the entire length of the longwall face; a drive unit at each end of the conveyor; the planer assembly; and pneumatic conveyor shifters.

The Conveyor Assembly

In the conveyor assembly, sections of the pan are about 5 ft. long with flexible couplings to permit mining along a moderately uneven coal face and mine floor. A steel tube in sections attached to the face side of the conveyor acts both as a guide for the planer and a return duct for the planer towing chain. A steel conduit for electric cables, a telephone line, and signal lights and an air line equipped with flexible couplings are attached to the gob side of the conveyor. The conveyor transports a load at a uniform speed of 150 f.p.m. toward the operating controls. Best results are obtained in planer mining when the face conveyor is kept in slight tension.

The planer is towed by a chain at a speed of 75 f.p.m. and mines 3 to 6 in. of coal from the face while travelling in either direction.

It mines the bottom portion of the bed (the height of the cut depending on how many sections are bolted to the base); under ideal conditions the unmined top coal breaks and falls into the conveyor. If the top coal fails to fall, it is wedged down with air picks; or in extreme instances, is drilled and blasted.

Pneumatic shifters are spaced 20 ft. apart. These shifters move the conveyor to the face as mining progresses and hold the planer against the coal as it moves along the face.

At left, a typical plan for spacing props and cribs

The mined coal is transported to the entry by the planer-face conveyor where auxiliary haulage equipment is used to carry it to the main haulage. The method used to get the mined coal from the face conveyor to the mine haulage will differ and depend on what equipment is used conventionally at each mine.

The general plan for supporting the roof in the working area along the face is to use steel props and bars together with wood cribs equipped with crib releases. Experience gained at each mine may indicate some variations in spacing of the supports; and, when best results are obtained by spacing in a certain pattern, that plan is followed exactly.

Props from the row nearest the gob are recovered and reset near the conveyor as mining progresses. As the props are recovered from the gob side the roof falls. Cribs are recovered also and rebuilt as soon as space is available. In a controlled operation the immediate roof is broken on release of the props, and this release is made before excessive weight builds up to cause undue pressure.

The Individual Mines

Percentage recovery by planer mining at Stotesbury No. 11 mine was computed and compared with recovery by conventional mining in the same area. Briefly, recovery in the first panel mined with the planer was 83.3 per cent, compared with 78.1 per cent mined by conventional room-and-pillar methods in an adjacent panel. Recovery by planer mining was lower than was anticipated because the unmined butt-entry chain pillars were larger than those normally left at this mine. Recovery by conventional methods was higher than at many mines, even though pillars were not extracted, because rooms were driven 50 ft. wide on 60-ft. centres, and butt-entry chain pillars left unmined were smaller than those left in the planer panel.

At Pine No. 1 mine, recovery in the planer-mined area is 71 per cent, compared with 53 per cent in an adjacent panel mined by room-and-pillar methods. Recovery in the planer-mined area was lower than might be expected because with the exception of panel 1, sets of 4 entries on 70-ft. centres were driven for development. Panel 1 was developed by a three-entry system. The large chain pillars in panel entries were not mined, and overall recovery in the planer-mined area was reduced accordingly. Recovery was low in the adjacent panel mined with conventional trackless mobile equipment because of poor roof conditions. In many rooms the roof could not be supported long enough to drive them the projected distance. Where conditions were favourable, some pillars were partly or wholly extracted.

At Island Creek No. 22 mine, recovery in the planer-mined area was 78 per cent, compared with 59 per cent in a nearby panel mined by conventional methods. A five-entry system was used in developing both panels. The panel-entry chain pillars were not extracted; therefore, recovery was not as high as might be expected. In the panel mined by conventional methods neither entry chain pillars nor room pillars were extracted, although some additional coal was recovered by splitting a few room pillars.

At Amherst No. 4 mine recovery in the planer-mined area was 83 per cent, compared with 55 per cent by conventional methods. Recovery in the planer panels was not as high as might be expected because entry chain pillars were not recovered. Neither entry chain pillars nor room pillars were extracted in the area mined by conventional methods. Many rooms could not be completed because of difficult roof conditions. To support the roof effectively in entries at this mine, it has been necessary to adopt a system in which wood crossbars are supported both by roof bolts and wood props.

AS the year draws rapidly to its close, the outlook for the steel industry has become the subject of somewhat anxious questioning. Compared with the sharp setback experienced in recent months by U.S. steel, the recession in the British branch of the industry precipitated by the credit squeeze and the consequent liquidation of heavy stocks, has been selectively insignificant. For some months past American steel plants have been operating at less than 80 per cent of capacity and in

Wanted—

the third week of last month ingot production fell below 2,000,000 tons, the lowest point reached since August, 1956.

American steel makers are not unduly alarmed. There, as here, the recession is in part attributed to the cut in consumers' inventories, and if the producers have to tighten their belts for a period, it is believed that the move towards cheaper money will give an impetus to the steel industry before the summer of 1958.

Meanwhile, British steel production is running not so far below peak levels, and the indications are that the aggregate ingot output this year will amount to about

More and Bigger

22,000,000 tons compared with 20,700,000 tons in 1956, whilst the European Coal and Steel Community achieved a record output of 49,500,000 tons in the first ten months of this year representing an advance of 5 per cent over last year's figures.

It is rather difficult to assess the precise influence of the new tariff agreement reached by the British Government and the High Authority of the European Coal and Steel Community, which has been formally ratified at Luxembourg and is due to become effective on February 10th.

Briefly, the agreement initially proposed by the British authorities provides for the cancellation of British steel tariffs *vis-à-vis* the member States of the Community,

Ore Carriers

which range from 15 to 33½ per cent and the substitution of an *ad valorem* duty of 10 per cent. But the fact is that customs duties on a very wide range of steel products are at present suspended and it is not yet clear whether it is the intention to re-impose the modified duties as soon as the agreement comes into force.

In any event, expansion of British steel capacity has led to a sharp contraction in the volume of imports. In the first nine months of this year the stowage amounted to 750,000 tons, and whether or not the new tariffs are made

immediately effective, the further reduction of imports is assured.

A more important factor is the relationship of U.K. home prices and European export prices. The margin has recently been narrowed, but British steel retains its advantage, and, as instanced by the rise of 3 to 5 per cent in German quotations last month, home producers are now in a strong position to prosecute the drive for a bigger export trade in the ensuing year.

That they are not unhopeful of success is indicated by the fact that the present lethargy of the market has not prompted any modification of the plan to increase steel capacity by a further 1,500,000 tons in the next twelve months.

Another indication which points in the same direction appears to have escaped attention. Imports of foreign ore in the second half of the year have been on an almost fantastic scale. During the four months July to October, these amounted to 6,694,000 tons and arrivals for the whole year will not fall far short of 16,000,000 tons, or nearly double the tonnage required as recently as 1950.

This increasing dependence of the steel industry on imported ore supplies poses immense problems which are not confined to the acquisition of larger tonnages wherever they become available. It has become manifest that there is immediate need for a greater measure of collective effort in the organization of the vast fleets of carriers engaged in ore transport.

Recognizing its dangerous and costly dependence on independent ship owners for this big transport job, the industry has embarked on a programme of building specialized ore carriers. Already 72 of those ships have been built or are nearing completion, but their capacity is now seen to be too limited. One-third of the new ore fleet consists of 8,000-9,000 tonners, the remainder have a maximum carrying capacity of 13,500 tons and if no better provision is made before 1962 when the steel industry's third development programme is due for completion, a substantial proportion of the estimated requirement of 23,000,000 tons of imported ore will have to be ferried here by independent steamers, few of which have been designed for the job. More and bigger ore carriers is the obvious solution.

These considerations invest with peculiar significance the recent arrival of the British ship, *Ruth Lake* at Tyne Dock, with a cargo of 28,000 tons of ore consigned to the Cre-salt Iron Co. It is by far the biggest ore cargo which has ever reached a British port and complete discharge was accomplished in 58½ hours.

The unfortunate fact is that no other port in the U.K. is capable of handling an ore cargo of this magnitude. Ore carriers of vastly bigger dimensions are in service elsewhere and U.S. interests have on order specialized ships with a capacity of 80,000 tons; but such ships are useless to us until these vast development works are carried out at the ore terminals.

Equipment to handle 20,000 tonners is being provided on the Clyde and at Newport, Mon., whilst Milford Haven is designated as the suitable terminal for much bigger ore carriers. But dock development and the provision of modern discharging plant is a slow process. Nor can the limitations of handling at the ore loading ports be ignored in the final reckoning.

The conclusion is that the transition from the small tramp steamer to the bigger carrier designed expressly for the ore carrying trade must be governed by "the inevitability of gradualness". But a saving of say 10s. to 20s. per ton in transport charges is the decisive factor which must determine future progress.

Machinery and Equipment

New Plant Speeds Quarry Production

Use of mobile flexible plant at the four quarries operated by the South-Western Stone Co. on the island of Portland, Dorset, is enabling this U.K. producer of building stone to work to greater depths and to produce stone from deep areas in a balanced programme designed to ensure the maximum utilization of its reserves.

To deal with the removal of overburden containing hard slate and rock interspersed with beds of clay, dirt and shivered stone, the company introduced a Climax Vole drill, to operate at all four sites. Matching equipment was a Consolidated Pneumatic rotary Power Vane compressor—a C.P. RO.120 delivering 120 cu. ft. per min. F.A.D. at 100 p.s.i.

Thickness of overburden varies from 45 to 50 ft. in the Perryfield and Cottonfield areas to 22 to 27 ft. in the Wakeham and Coombefield areas. After blasting, the broken rubble is cleared by Ruston-Bucyrus 33 RB excavators in the deeper areas and by a 19 RB in the shallower areas, with assistance from time to time from a Ruston-Bucyrus 22 RB transit unit.

The Vole drill, which utilizes a driving hammer sited immediately behind the tungsten carbide bit, is capable of drilling holes down to 150 ft. in depth, although the average depth drilled at the Perryfield quarry at which it operates, is of the order of 43 ft. Two holes per day are drilled and two types of bit are used. A tungsten carbide bit is used to penetrate rubble and the softer layers occurring between the beds of the tough purbeck limestone, where a change is made to a chrome steel bit, diameters in both cases being $\frac{1}{2}$ in.

Part of the initial stripping of rubble is carried out by a mobile highly-versatile Ruston-Bucyrus 22RB transit unit mounted on a Foden chassis. For stripping duties, the 22RB is equipped as a dragline with a 30-ft. boom and a $\frac{1}{2}$ -cu. yd. capacity bucket. The transit unit when required can also perform auxiliary shovel-loading duties at the rock pile, a $\frac{1}{2}$ -cu. yd. dipper being fitted for this purpose.

Other duties of the Ruston-Bucyrus 22RB transit unit call for its use as a lifting crane and the time-saving aspect of this mobile unit is well demonstrated by the fact that whereas in former times a whole month was required to move a Scotch derrick down through 15 ft. from one floor to another, the complete task of removing and replacing 60 tons of ballast, dismantling a derrick and reassembling it is now carried out in under one week.

The tough freshwater limestone occurring immediately underneath the overburden maintains a thickness of 12 to 15 ft. in all areas. Drilling of this strata is

effected by Consolidated Pneumatic type CP32 drills, one of these being operated with an airleg to drill holes at the base of the quarry face. Spacing and burden is 6 ft. each way and instantaneous detonation is employed.

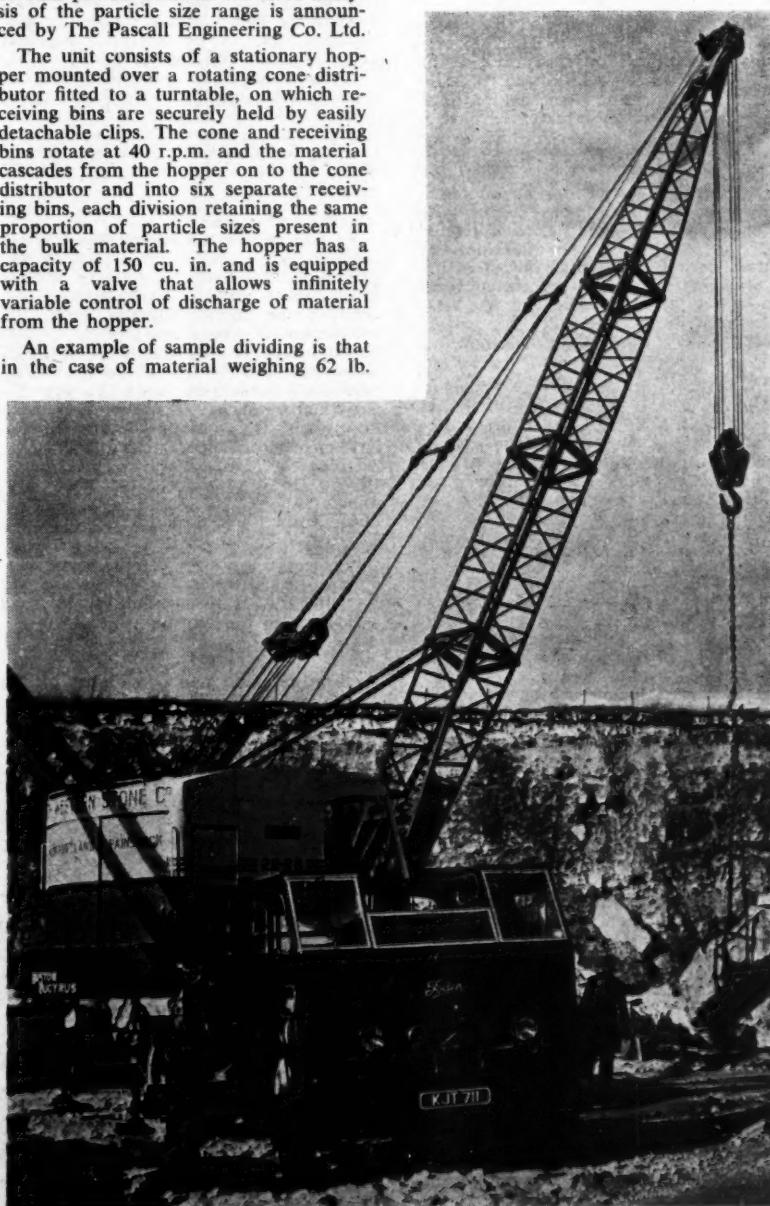
CASCADE SAMPLE DIVIDER

A useful laboratory unit for quickly obtaining a small representative sample of bulk powder material for sieve analysis of the particle size range is announced by The Pascall Engineering Co. Ltd.

The unit consists of a stationary hopper mounted over a rotating cone distributor fitted to a turntable, on which receiving bins are securely held by easily detachable clips. The cone and receiving bins rotate at 40 r.p.m. and the material cascades from the hopper on to the cone distributor and into six separate receiving bins, each division retaining the same proportion of particle sizes present in the bulk material. The hopper has a capacity of 150 cu. in. and is equipped with a valve that allows infinitely variable control of discharge of material from the hopper.

An example of sample dividing is that in the case of material weighing 62 lb.

per cu. ft., the hopper takes a 5-lb. sample and one division of this sample produces six lots of about 60 grammes each. The hopper, cone distributor, cover, turntable and base, are made of aluminium alloy and the receiving bins, of stainless steel. The valve, which can be easily removed from, or re-assembled in the hopper, is also of stainless steel construction. The drive is by fractional h.p. motor and the whole unit, including motor, weighs about 22 lb.



The Ruston-Bucyrus 22RB transit unit handling derrick ballast at Portland

MINING MISCELLANY

A scheme has been worked out for exploiting the hydro-power resources of the River Pets on the Soviet-Norwegian frontier. *

The Government of Ceylon has decided to amend the Income Tax Ordinance to give relief to "approved investments" in order to promote increased capital formation, particularly development projects. The tax relief will be available only to original investments. *

Proposals for prospecting concessions in certain areas of Angola and Mozambique can be submitted to the Economics Department of Portugal's Overseas Ministry up to the end of the current year. *

The Thailand Steel Co. has been granted permission by the Thai Government to explore for iron ore in the northern province of Loei and to establish an iron smelting plant in that area. The plant, which is expected to have a daily capacity of 200 tons, would be the biggest in Thailand. *

Several Japanese firms have shown interest in the Timna copper works, near Eilat, Israel, and wished to contract for the purchase of large quantities of copper, even for the entire output of the local mines. When the construction of the copper works is completed, the total investment will amount to about £18,000,000 to £19,000,000. *

In the presence of UNESCO representatives and a number of Israeli and foreign scientists, the new Negev Research Institute has been inaugurated in Beersheba. Among the many problems to be studied, will be the improvement of Dead Sea products and the methods used in extracting them, and also the development of the resources of Mount Sodom in that area. *

Rio Tinto Mining of Canada, through its Rio Canadian Exploration concern, has become interested, along with Sogémines Development, in a molybdenite prospect. A new company, Pidgeon Molybdenum Mines, has been formed to acquire twelve claims in Echo Township, Ontario, some 200 miles north-west of Port Arthur. *

An amalgamation of Canadian nickel properties, as a means of consolidating a minimum of 75,000 s.tons of nickel to meet premium-priced contracts over the next five years, has been approved by the Eastern Mining and Smelting Corp. The merger involves Eastern Mining, Nickel Rim Mines, Canalask Nickel Mines, and the major properties of Trebor Mines. Completion of the union would provide the Chicoutimi, Quebec, smelter, with more than 7,000,000 tons of ore reserves. *

A French group, Péchiney and Compagnie, is to build a ferro-chrome manufacturing unit in Turkey, for which French industry will supply all the equipment and industrial plant. The unit will be situated in the Antalya region, near the Kapez power station. The Turkish Eitbank will subscribe 60 per cent of the £15,000,000 capital of the operating

company, the balance being taken up by Péchiney and Compagnie. *

American Potash and Chemical Corp. has completed arrangements for exploration investigations of manganese ore deposits at Batesville, Arkansas. The deposits cover 100,000 acres of land about 100 miles north-east of Little Rock. Mineral rights to the deposit are held by four Arkansas companies. If results of the studies are favourable, American Potash plans the formation of a new company to undertake commercial production. *

American Smelting and Refining Co. has announced the discovery of a large deposit of ilmenite-bearing sands near Lakewood, New Jersey, where it has obtained options on several thousand acres of land. The deposit is said to be of commercial grade, and mining will be done by dredging operations. If the company decides to proceed with development, current plans call for the production of an ilmenite concentrate which would be sold to manufacturers of titanium pigment. *

A map of the Camborne-Chacewater mining district, 1819, forms part of an exhibition of documents relating to the history of Cornwall which opened recently at the County Museum, Truro, in celebration of the silver jubilee of the British Records Association. The map shows the area to have been the most productive mining district in the west of England. At Wheal Virgin in 1757, the first fortnight's working is reported to have produced copper ore worth £5,750. A plan of East Wheal Crofty Sett, Illogan, 1833, recalls the fact that this mine, now part of South Crofty, produced over 100,000 tons of copper ore between 1832 and 1853. *

A geological survey party from Mount Isa Mines, Ltd., North Queensland, has discovered in the Northern Territory an

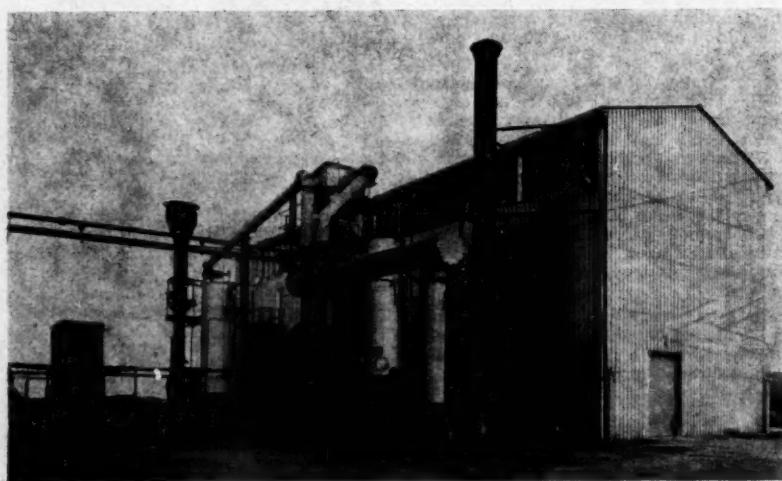
outcrop of lead carbonates containing about 10 per cent lead. The site is 33 miles south-west of Booraloola and about 400 air miles north-west of Mount Isa. The outcrop is about 400 ft. long, with an average width of 120 ft., and the company has sunk a prospecting shaft to 60 ft. A crosscut from the bottom of the shaft advanced 70 ft. through similar-grade material. The company, reportedly, will continue sinking additional prospecting shafts and crosscuttings to delineate the mineralization at the 60 ft. level. No decision on mining operations will be made until the potential extent of the deposit is determined, which may take more than two years to prospect. *

The World Bank has made a loan equivalent to \$40,000,000 for road construction and improvement forming part of the Ten-Year Plan for the development of the Belgian Congo. The loan will cover the cost of imported equipment, materials and services required for work on the highway system during the four years 1957-60. One of the new highways will connect important mining centres in the province of Katanga; another will provide access to the East African Railways in Uganda for shipment of exports through the port of Mombasa. *

The Confederation of Industrial Chambers (CONCAMIN) has put before Mexico's Minister of Economy, Sr. Loyo, a project for investing 350,000,000 pesos in the metallurgical industry in the states of Michoacan (Las Truchas), Colima (Montitlan) and Jalisco (Autlan), which are rich in iron ore deposits. The capital will be wholly Mexican and the scheme has the backing of Nacional Financiera. *

The North Wales Gas Grid was opened by H.R.H. Prince Phillip on November 28. Consumers served by this grid receive part of their gas from a unique supply of methane produced by the mine drainage system at Point of Ayr

The catalytic reforming plant at Point of Ayr. The plant is designed to reform methane gas from Point of Ayr Colliery into ordinary town's gas



Colliery, near Prestatyn. Almost pure methane from the colliery is re-formed into normal town's gas by a plant designed and built for the Wales Gas Board by Humphreys and Glasgow, Ltd., of London. The installation comprises two separate units, one being a catalytic plant using the Onia-Gegi process and the other a carburetted water gas plant.

★

The Kilembe mines in western Uganda, which are backed by Canadian finance, are to introduce extensions to increase the output of copper ore to 60,000 tons from 45,000 tons monthly, giving 1,000 tons instead of 700 tons of blister copper monthly. The mine is planning to exploit large reserves of oxide ores available near the surface, in addition to the deeper sulphide ores now being worked. The new ores would be worked by opencast methods, but a new treatment plant would be required. The extensions and new plant are expected to be in operation early in 1959.

★

The eighteen experts, employers and workers, who form the sub-committee on conventional training in coal mining of the High Authority of the European Coal and Steel Community, have spent a ten-day study session in Great Britain from November 25 to December 4 on the invitation of the National Coal Board.

PERSONAL

A memorial service for Sir Ernest Oppenheimer will be held at St. Martin's-in-the-Field, W.C.2, on Tuesday, December 17, at noon.

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Mr. Harry Oppenheimer is donating £1,000,000 to the formation of the "Ernest Oppenheimer Memorial Trust". Sir Ernest had frequently expressed the wish that such donations should continue and had asked Mr. Oppenheimer that in the event of his death steps should be taken as seemed appropriate for this purpose. Mr. Oppenheimer said on Wednesday that the funds of the trust would be applied for the benefit of the peoples of the Union, S.W. Africa, and the Rhodesian Federation, especially in the sphere of education.

★

The American Institute of Mining, Metallurgical and Petroleum Engineers has announced that Dr. John F. Thompson, chairman of Inco, will be the recipient of its Charles F. Rand Memorial Medal for 1958, awarded for "his leadership of a mining and metallurgical enterprise which has contributed to Free World strength".

★

The General Electric Co., Ltd., has appointed Mr. A. L. G. Lindley an assistant managing director. He will be responsible for the Engineering Group, production and sales, home and export.

★

Mr. Robert Walker has relinquished office as managing director of the Central Mining and Investment Corporation, Ltd., and Central Mining Finance, Ltd., but remains a member of the boards. The management is now as follows: chairman, the Rt. Hon. Lord Baillieu; managing director, Mr. S. D. H. Pollen; executive director, Mr. T. Muir Warden; managers, Mr. G. W. Flint, Mr. R. St. L. Granville, Sir Jim S. Holland, Bt., and Mr. N. W. S. Lewin; assistant managers, Mr. J. V. Harris and Mr. A. C. Langebrink; secretary, Mr. J. E. Dexter.

Mr. A. J. Sovers has retired after 36 years with Borax Consolidated, Ltd. Since February, 1946, he has been on the board of the parent company, now Borax (Holdings), Ltd.

★

Mr. A. W. C. Sitch has been appointed a director of Mocatta and Goldsmid, Ltd. Mr. J. S. Matterson has been appointed manager.

COMPANY EVENTS

Black and Decker, Ltd., have formed a new subsidiary, Black and Decker (New Zealand), Ltd., which provides a complete repair and maintenance service for the parent company's rapidly increasing exports to New Zealand.

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A new company, Vickers-Armstrongs (Tractors) Canada, Ltd., has been formed as the Canadian subsidiary of Vickers-Armstrongs (Tractors), Ltd., England, with its registered office in Montreal. It already has a depot in Vancouver and will shortly open up a second one in Toronto. This means that Vickers Canadian tractor dealers and users are now assured of quick, "off-the-shelf" service.

★

On Monday, November 25, Mr. R. J. Dudley, sales director of Jack Olding and Co., Ltd., officially handed over the fifty-sixth Lima 2400 excavator sold by the company to Mr. K. Newcombe, general manager of Sir John Jackson, Ltd. The machine is equipped as a 6 cu. yd. face shovel and is now at work on a new opencast coal site contract awarded to Sir John Jackson, Ltd. This is named the Trimsaran Wood Zone and involves the removal of 10,000,000 cu. yds. of overburden. This latest "2400" brings the owner's fleet up to six of these machines. Four will be used on the new site; two equipped as face shovels and two more as draglines with 120 ft. booms.

★

As from December 2, 1957, all the sales and administrative offices of Chemidus Plastics, Ltd., will be located at the company's works address, 26 Progress Way, Purley Way, Croydon, Surrey. The new telephone number, both for works and offices, will be Croydon 9351.

★

The North of England Institute of Mining and Mechanical Engineers will hold its annual dinner and dance on Thursday, February 27, 1958. The next meeting will take place on February 15, 1958.

★

As from December 9, 1957, the head office and contracts department of George Stow and Co. Ltd. will be transferred from Slough to Reading Road, Henley-on-Thames. The works will, however, remain at Mill Street, Slough.

EXHIBITIONS AND CONFERENCES

A "clocked" gate attendance of nearly 64,500 was recorded by the National Metal Exposition and Congress at its 39th Metal Show, which concluded in Chicago, Illinois, on November 9. The 1958 Metal Show will be held in Cleveland, October 27-31. It has been further announced that the third World Metallurgical Congress is to be held in Chicago in 1962.

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The 5th International Congress and Electronics and Nuclear Energy Exhibi-

tion will be held in Rome from May 10-May 25, 1958.

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An international trade fair, "Plastics, 1959", will be held in Dusseldorf, Germany, from October 17 to 25, 1959. The technical organization is in the hands of Nordwestdeutsche Ausstellungs-Gesellschaft mbH. (NOWEA), Dusseldorf, Ehrenhof 4.

★

The Purchasing Officers' Association, in association with the European Productivity Agency, will be holding a series of purchasing seminars in London, Birmingham, Manchester, Belfast, and Glasgow during January and February, 1958. They will be conducted by Mr. H. Lee Weber, purchasing consultant to the European Productivity Agency. Applications should reach the secretary of the Purchasing Officers Association, Wardrobe Court, 146A Queen Victoria Street, London, E.C.4, if possible by December 31.

AGENCY WANTED

A. Majid and Co., Gowalmandi, Rawalpindi, Pakistan, wish to establish contact with United Kingdom manufacturers of machinery for use in coal mines, including air compressors, rock drills, pneumatic grinders, drill steels, rubber hose pipe, iron wheels for coal tubs, steel wire rope, etc., for all of which types and makes are specified. Details available from this office or from the Export Services Branch, The B.O.T. Ref. is E.S.B. 28012/57. Telephone inquiries to Chancery 4411, extension 776 or 866.

★

The Israeli Ministry of Development are seeking ideas for a 40 km. conveyor for muriate of potash, prepared at the Dead Sea works at Sodom, to a convenient loading point either at railhead shortly to be completed at Dimona, east of Beersheba, or at a truck-loading station in that area. The Dead Sea works are some 1,200 ft. below sea level, and the main purpose of the conveyor system would be to raise the potash to sea level some ten miles to the west over largely precipitous country. Another conveyor system would be required for moving flint clay from deposits in the northern or central Negev some 14 km. to railhead. Interested manufacturers should write to the Chief Planning Engineer, Ministry of Development, King David Building, Jerusalem, at the same time informing the British Embassy, Commercial Dept., 192 Hayarkon Street, Tel Aviv, that they have done so. B.O.T. Ref. E.S.B. 28046/57. Telephone inquiries to Chancery 4411, extension 776 or 866.

Obituary

L. C. WALKER

It is with regret that we must record the death of Mr. L. C. Walker, which occurred recently at Finchley, London, at the age of 77. Mr. Walker's career was closely identified with that of the late Mr. H. G. Latilla, with whom he was associated for over forty years. Throughout this period he was actively concerned with the growth of the Latilla interests, particularly in Ghana and in Nigeria. During the last year of his life, owing to failing health, he was obliged to relinquish his directorships of a number of mining companies in what has now come to be known as the "120 Group".

Metals and Minerals

Expansion of Manganese Ore Production

India has long been the largest supplier of manganese ore to the United States market, accounting last year for 648,557 s.tons with an Mn. content of 289,552 tons out of total United States imports of 2,230,583 s.tons with an Mn. content of 1,013,385 tons.

Latterly, however, Indian manganese has been losing ground in the United States, chiefly because of the Government's new mineral export policy and the incursion of the State Trading Corporation into this field. At the annual meeting of the Western India Minerals Association, the chairman, Mr. Natwarlal Shamaldas Worah, said that the Government of India, during the past few years, had been changing its export policy for this important mineral very often and consequently exasperated buyers in foreign countries, especially in America, had decided on encouraging producers in countries much closer to the consuming countries to open up mines in these territories. Consequently the cost of ocean freights was much reduced and the material becomes cheaper, particularly in the lower grades.

It is noteworthy that in June—the last month for which official statistics are to hand—Brazil supplied 45 per cent of the total United States imports against India's 20 per cent, the balance coming from Ghana, the Union of South Africa, Angola, Cuba, Morocco, Mexico, the Federation of Rhodesia and Nyasaland, Belgian Congo, Venezuela, Philippines, Peru, Chile, and Indonesia.

Certainly the developments now taking place in a number of countries—not least of them the growing emphasis on the exploitation of United States and Canadian low-grade ores—must be of considerable concern in India to the authorities concerned with export policy.

Brazilian production in 1958 is expected to be between 750,000 and 1,000,000 tons; even at the lower figure Brazil's share of the United States market is likely to be substantially higher in the coming year.

Increased manganese exports are planned by South Africa, whose reserves are among the largest in the world. They occur in various parts of the country, the most important being those near Postmasburg in the North-west Cape. In 1953 over 700,000 s.tons were sold overseas for more than £4,200,000. Since then there has been a decrease in activity, mainly because of inadequate facilities for trucking the ore to the coast and loading it on to ships. To meet this situation the harbour at Port Elizabeth is being developed, part of the main line in the North-west Cap is to be doubled, and extensive improvements are to be made to the Postmasburg branch line.

The annual report of Anglo-Transvaal refers to additional manganese rights acquired by the Associated Manganese Mines of South Africa, Ltd., in the "Blackrock" area, where prospecting operations have established that there are extensive deposits of ore suitable for the production of ferro-manganese.

India itself produces about 1,700,000 tons of manganese ore annually, output

during the half-year ending June 30, 1957, being placed at 884,000 tons. Indian manganese has been finding a growing market in Japan and also in Western Germany. Exports to the latter country in the first half of this year alone were 110,893 tons against 39,356 and 62,781 tons for the years 1955 and 1956 respectively. In view of present market conditions, future prospects cannot be precisely forecast, quite apart from transport considerations.

Mr. Nityanand Kanungo, Minister for Commerce, said recently that a representation had been received from the Madhya Pradesh mineral industry association (Madhya Pradesh produces over 70 per cent of the manganese ore mined in India) demanding guarantees of transport for a quota of 480,000 tons of manganese ore registered for export in the names of private exporters, but the Government was in no position to give any such guarantee. The Minister expressed disagreement with the view that the transport problem had worsened, maintaining that, in fact, "in some sectors there had been some improvement".

Mr. Edward Beharry, Minister for Natural Resources, has announced that work on a \$40,000,000 (West Indian) manganese project in the north-west district of British Guiana will begin early in January. Preliminary surveys are being carried out and the mine itself is in the process of being developed. The North-West Guiana Mining Co., Ltd., it has been reported, plans to produce 10,000 tons of manganese monthly, starting in 1959, with a rise to 30,000 tons by 1961. The company proposes to construct a 38-mile railway to bring the ore to a shipping point.

NICKEL IN 1958

Addressing the Mining and Metallurgical Society of America, Mr. J. R. Gordon, vice-president of International Nickel, said that the supply of nickel next year was likely to be adequate for all consumers on the basis of the current economic outlook and unchanged defence needs. He indicated that nickel was now in "bountiful" supply and that much of the premium price metal offered from the Government stockpile was being refused. Three factors will condition the outlook for 1958. The first is the extent to which old nickel uses will be restored. Second is the question of defence requirements, in which regard it has to be remembered that the United States is at present in a transition period from a reduction in manned aircraft to an increase in the production of missiles, which has not yet materialized. A third factor is the question of the economy in 1958.

Meanwhile, the improved domestic supply position in the United States has been reflected by the relaxation of restrictions on exports of nickel-bearing commodities. Fourth-quarter export quotas have been increased and licensing requirements have been reduced.

Disposal of the United States Government's nickel processing plant at Nicaro, Cuba, to private industry may not be accomplished this year and Congressional action is expected to continue operating the \$85,000,000 plant for another year under a G.S.A. contract with the National Lead Co. It is understood that so far bids, if any, have proved unacceptable to the United States Government. Among the reasons for bidding reluctance is said to be the belief that the Cuban Government would place tax schedules on production at Nicaro as soon as it was taken over by private industry. The United States Government pays no taxes on the plant and its products to the Cuban Government. Last week, G.S.A. extended a public invitation to all interested firms to call upon the agency for facts and figures about the Nicaro plant prior to its formal offering for sale or lease.

It has been announced by Rio Tinto Management Services that underground and pilot plant operations at the Empress Nickel Prospect, near Gatooma, in Southern Rhodesia, are to be suspended at the end of this year, but the property will be placed on a care-and-maintenance basis in such a way that they can be restarted at short notice. Surface exploration will be continued.

KOUILOU POWER PROJECT

The French Government is to decide within a fortnight whether to go ahead or not with its power dam project on the Kouilou River, Middle Congo, according to a statement by Mr. Gerard Jaquet, French Minister for Overseas Territories. Answering questions on the impact on the French plan of the Belgian Inga dam project (*The Mining Journal*, 29/11/57, p. 656), Mr. Jaquet said that the French Government had not given up its plan to build the Kouilou dam. He considered that the Belgian Government had announced its decision in principle to build the Inga dam in order to bring pressure on France to take a decision on its own project.

The Kouilou project aims at providing low-priced electrical power, which would be used for three main purposes: to produce aluminium at a plant to be erected by an international group under French leadership; and to produce ferro-manganese using the rich manganese and iron ore deposits in Gabon less than 100 miles from the dam; and to produce fertilizers from deposits in French Equatorial Africa.

PLATINUM PRICE CUTS

On December 4 it was reported from New York that Baker and Co. had reduced their published prices for platinum by \$7 to new levels of \$77 an oz. for bulk quantities and \$80 for small lots. Up to the time of going to press the second major supplier, Johnson, Matthey & Co., had not yet announced any change from its \$84/87 level, nor had any price changes in London been notified.

COPPER · TIN · LEAD · ZINC

(From Our London Metal Exchange Correspondent)

Last week was a singularly uneventful one on the London Metal Exchange, with price changes in copper and zinc over the period being very slight and with a reduction of about £2 per ton in the levels for lead and zinc.

IS CHILE NEARER A COPPER CUT?

The copper market has been absolutely featureless and although over the weekend prices were lower, on balance there was practically no change until Wednesday, when a buying movement developed without attracting many sellers. It is thought that this was caused by knowledge leaking out that there had been a meeting between some copper producers (which definitely included the R.S.T. Group and representatives from Chile), and that cutbacks in production had been discussed. It seems premature, however, to imagine that the Chileans can introduce any such measure at the present time, as various labour contracts are due to come up for renewal early in the New Year, and negotiations would obviously be made very difficult unless production was running at normal levels.

The contango has now widened to £4½ per ton, although stocks in official ware-

houses on Monday only showed an increase of 335 tons.

In America, following the reduction in the customs smelter price, business has not been brisk, but with scrap remaining very scarce and producers stating their readiness to maintain the 27 c. per lb. level, it is not expected that there will be any change in the price structure.

On the Continent, business is described as "spotty", and scrap dealers in Germany especially are complaining about the relatively high level of prices. This makes it cheaper for consumers to buy refined copper direct from producers rather than from local refiners, who have to base their prices on scrap intake.

This week there has been no further news of cutbacks in production, and in fact the contrary has been the case, as the Kilembe Mine in Uganda has announced that they expect to increase their monthly output from 700 to 1,000 tons of blister copper: this, however, is a long-term project, as it will probably be over a year before the additional smelter capacity becomes available. The Russians also have announced that they are building what will probably be one of the world's biggest refineries in the centre of the copper mining area of Kazakhstan.

WAITING FOR THE I.T.C.

The tin market has been overshadowed by the meeting of the International Tin Council, which opened on Wednesday. At the time of writing there has been no communiqué or any information on how the discussions are progressing.

The market during the week has shown a very firm undertone after one short period of weakness, which may have been brought about by profit-taking on purchases made towards the end of last month. The stocks in U.K. warehouses were higher by 2,195 tons, which reflects very accurately the amount of tin which must have been absorbed by the buffer stock during the previous ten days.

The magnitude of the buffer pool manager's task is underlined by the latest Malayan statistics, which show that over 2,000 tons of metal were shipped to the U.K. during November, and unless consumer demand makes a miraculous recovery, most of this will obviously have to be bought by the buffer pool as soon as it is in warehouse stock.

The Eastern price on Thursday was equivalent to £724 per ton c.i.f. Europe.

DEMAND FOR LEAD-ZINC WEAK

The lead and zinc markets have been affected by the reduction in the United States lead price to 13 c. New York and the growing expectation that there will be tariff increases early in the New Year. Demand has not maintained the level of recent months and with the approach of the end of the year holidays it is difficult to see any factor emerging which will be a strengthening influence. Yet it must not be forgotten that with a zinc price below £65 per ton, quite a lot of residues are no longer moving to smelters.

An additional factor was the publication of the O.E.E.C. figures for the production of both metals during October, the production of lead showing an increase of 9 per cent over that for September and the production of zinc showing an increase of 3 per cent.

The general opinion appears to be that the zinc price is now at such a level that production will be automatically affected through lack of concentrates, but that in the case of lead this position has not yet been reached, and there are some who think that the historical position of lead with a price under that of zinc may be re-established by the middle of next year. News from America is very scant, but it appears that the Tariff Commission are unlikely to make any recommendations until January, so that any new duties are unlikely before March.

Closing prices are as follows:

LONDON METAL AND ORE PRICES, DEC. 5, 1957									
METAL PRICES									
Aluminium, 99.5% £197 per ton									
Antimony—									
English (99%) delivered, 10 cwt. and over £190 per ton									
Crude (70%) £190 per ton									
Ore (60%) basis 20s. 0d./21s. 0d. nom. per unit, c.i.f.									
Arsenic, £400 per ton									
Bismuth (min. 1 ton lots) 16s. lb. nom.									
Cadmium 11s. 3d. lb.									
Cerium (99% net), £13 18s. lb. delivered U.K.									
Chromium, Cr. 99% 7s. 2d. lb.									
Cobalt, 16s. lb.									
Germanium, 99.99%. Ge. kilo lots 3s. 4d. per gram									
Gold, 249s. 4d.									
Iridium, £27/29 oz. nom.									
Lanthanum (98/99%) 15s. per gram									
Manganese Metal (96%-98%) £310									
Magnesium, 2s. 5d. lb.									
Nickel, 99.5% (home trade) £600 per ton									
Osmium, £20/23 oz. nom.									
Osmiridium, nom.									
Palladium, £7 10s./£8 0s. oz.									
Platinum U.K. and Empire Refined £30/31 oz.									
Imported £27 10s. 0d. nom.									
Quicksilver, £69 0s. ex-warehouse									
Rhodium, £42 oz.									
Ruthenium, £16/18 oz. nom.									
Selenium, 53s. 6d. per lb.									
Silver, 77 <i>1</i> / ₂ d. f. oz. spot and 77 <i>1</i> / ₂ d. f.d.									
Tellurium, 15s. 16s. lb.									
ORES AND OXIDES									
Bismuth	65 <i>1</i> / ₂ s. 8s. 6d. lb. c.i.f.
									20 <i>2</i> / ₃ s. 3d. lb. c.i.f.
Chrome Ore—									
Rhodesian Metallurgical (semifriable) 48%									£19 5s. 0d. per ton c.i.f.
" Hard Lumpy 45%									£19 5s. 0d. per ton c.i.f.
" Refractory 40%									£13 0s. 0d. per ton c.i.f.
" Smalls 44%									£18 0s. 0d. per ton c.i.f.
Baluchistan 48%									£12 0s. 0d. per ton f.o.b.
Columbite, 65% combined oxides, high grade									nom.
Fluospar—									
Acid Grade, Flotated Material									£22 13s. 3d. per ton ex. works
Metallurgical (75/80% Ca F ₂)									156s. 0d. ex. works
Lithium Ore—									
Petalite min. 3 <i>1</i> / ₂ Li ₂ O									47s. 6d./52s. 6d. per unit f.o.b. Beira
Lepidolite min. 3 <i>1</i> / ₂ Li ₂ O									47s. 6d./52s. 6d. per unit f.o.b. Beira
Amblygonite basis 7 <i>1</i> / ₂ Li ₂ O									£26 5s. per ton f.o.b. Beira
Magnesite, ground calcined									£23 0s./£30 0s. d/d
Magnesite Raw (ground)									£21 0s./£22 0s. d/d
Manganese Ore Indian									
Europe (46%-48%) basis 95s. freight									124d./125d. per unit c.i.f. nom.
Manganese Ore (43 <i>1</i> / ₂ -45%)									97d. per unit c.i.f. nom.
Manganese Ore (38 <i>1</i> / ₂ -40%)									80d./82d. per unit nom.
Molybdenite (85% basis)									(including duty) 8s. 5d. nom. per lb. (f.o.b.)
Titanium Ore—									
Rutile 95.97% TiO ₂ (prompt delivery)									£44/£46 per ton c.i.f. Aust'n
Ilmenite 52/54% TiO ₂									£11 10s. per ton c.i.f. Malayan
Wolfram and Scheelite (65%)									103s. 0d./105s. 0d. per unit c.i.f.
Vanadium—									
Fused oxide 90-95% V ₂ O ₅									£10 per unit c.i.f.
Zircon Sand (Australian) (63-56% ZrO ₂)									£16 per ton c.i.f.

Mining Finance

Malayan Tin Twins Compared

Of chief interest in the full reports of the Malayan Tin Dredging and Southern Malayan Tin Dredging companies are the production figures and the balance sheets. Malayan Tin produced 2,130 tons of tin concentrates in the year to June 30 compared with 3,200 tons in the previous year. This declining tendency is continuing in the current year for the first quarter of which Malayan produced 438 tons, which contrasts with 592 tons in the September quarter of last year and an average of 532 tons in the past financial year. A drop in tin recovery per cubic yard dredged is the principal reason for this falling production.

Southern Malayan is having very much the opposite experience. True, the 1956-1957 output fell to 2,221 tons from 2,732 tons for the preceding year, but in the first quarter of 1957-58 production jumped to 916 tons against 652 tons in the September quarter, 1956, and a 1956-1957 average of 555 tons. It is possible that there will be a still further improvement in the current quarter, because the newly acquired sixth dredge which helped to boost the September quarter operations did not start up until August 16, that is to say about halfway through the period.

The liquid assets of tin companies are always an important point in any assessment of their position. Both these particular concerns are well placed in this respect. Malayan has net liquid assets of £1,213,000 compared with an issued capital of £900,000, Southern Malayan £906,000 against a capital of £1,441,667. Neither concern has joined in the capital repayments which have been such a popular feature of the tin share market in recent times. The reason is that the companies have extensive areas of new ground which give them excellent life prospects, but which, on the other hand, require deep-digging dredges. These are an expensive proposition these days.

Malayan, in fact, is already purchasing one at a cost of between £800,000 and £850,000. It is estimated that this should be ready to start up at the end of next year or early in 1959. A further dredge may be necessary in due course. Southern Malayan has been fortunate enough to acquire a conveniently situated second-hand dredge, which is the one that came into production in August.

Malayan 5s. shares stand at 12s. to yield 16.7 per cent on the 2s. paid for 1956-57 and Southern Malayan at 9s. 9d.

LONDON MARKET HIGHLIGHTS

Mining share markets made a pretty lethargic showing in the week ended December 4. Business generally dwindled to a minimum and highlights were few and far between.

Gold share prices edged a few pence over the period and although business was small, the undertone of the market remained very firm indeed. One really bright spot was the solid advance in Vaal Reefs on hopes of a good December dividend. The bumper payment of 2s. 3d. was above the most optimistic estimates and the shares quickly reached a new peak of 39s. 6d.

Elsewhere in the newer mines there seemed to be some switching out of Western Holdings into Free State Geduld, although the operation had only a small effect on the respective share prices. St. Helena (35s. 7½d.) quietened down after their recent rise and others were unaffected by the November monthly returns.

The older dividend payers jogged along with small changes either way. East Geduld dropped back to their lowest for many years of 21s. 3d. on fears about the forthcoming December dividend. East Rand Proprietary, on the other hand, remained quite unaffected by news of an underground fire (now under control).

Among other gold shares Ashanti (13s. 10½d.) brightened on the high development values disclosed in the November report. The importance of these good values lay in the fact that they further confirmed the richness of the Main Reef persisted at depths below the No. 35

level. It is this reef which will provide the mine's mainstay in the future. Also firmer were North Kalgurli, which improved to 7s. on the encouraging annual report.

Platinum shares were badly unsettled by the weakness of the commodity price. It was reported that Russian metal was being quoted as low as \$66 per troy oz., compared with the official price of around \$85. Lydenburg Platinums fell 1s. 6d. to 8s. 3d. "Pots" 1s. to 7s. 9d., while Unions (11s.) and Waterval (12s. 6d.) were both around 1s. down.

Copper shares were showing signs of a further downturn as the still large bear position gradually sorted itself out. Nchanga, strangely enough, moved ahead at one time to 177s. 6d., despite the fact that their interim dividend is due to be announced soon. Rhodesia-Katanga, still numbed at 11s. by the Kansanshi care-and-maintenance decision, failed to respond to the progress report on the position at the mine prior to the flooding, which disclosed sulphide ore reserves increased to 153,200 tons, together with a rise in the grade to 5.77 per cent copper.

Tin shares were without material change, the recovery in the metal price being offset by expectations that export quotas for tin may soon be announced. Lead-Zincs, where changed, inclined to ease on the low metal prices. Trepca (5s. 1½d.) responded at one time to a sudden demand which was apparently based on hopes that the not very recent liquidation proposals should soon come to fruition.

to yield 17.1 per cent on the 1s. 8d. dividend for that period. On the medium-term view in the light of the divergent production trends, it looks as though either Southern Malayan must be standing too low or Malayan too high.

HOPE FOR NEW UNION

It is obvious from the latest accounts of New Union Goldfields that the poor mining market conditions in the twelve months to June 30 last did not help the company in its prolonged struggle back to the dividend-paying stage. Since June, however, the chairman, Mr. M. E. Rich, says that the liquid position has improved "quite considerably". He goes on to say that the shareholdings (in which the newer gold mines figure quite prominently) are now written down to an extremely conservative level. Unless anything unforeseen happens profits should not have to be utilized or reserves drawn upon to absorb investment depreciation in the future on the same scale as they have in the past. The surplus of market value over book value of investments had increased from £117,100 on June 30 to £262,500 by October 18.

Mr. Rich thus feels "reasonably confident" that the company's results for this year will be "decidedly better" than those for 1956-57. It would be very optimistic to expect such an improvement to mean that there is any chance of a distribution for 1957-58. The 5s. shares stand at 4s. 3d. They are chiefly a speculation on a strong forward movement occurring in Kaffirs generally. Mr. Rich's statement appears on page 695.

GOLD FIELDS AND THE WEST WITS LINE

In many ways the achievements of the past few years on the West Wits Line must stand as one of the most remarkable successes of the South African Gold Mining Industry. This thirty-mile stretch of once bare veldt, only thirty years ago unsuspected as a potential bearer of gold reef, has within a score of years become the producer of over 15 per cent of the Union's gold at an average grade (last quarter) of 9.0 dwt. per ton, compared with the average for the industry as a whole of 5.1, as well as contributing around 1,000,000 tons of uranium oxide annually to the British-American stockpile. This year, too, came the news that the West Wits line is to become the home of what is probably the world's deepest and certainly the world's costliest gold mine, Western Deep Levels.

The credit for this striking success story must go for the most part to Consolidated Gold Fields and to West Witswatersrand Areas, originally an exploration company, but now the holder, at today's prices, of some 18 per cent of the equity of the West Wits mines. These companies it was which conducted the original geophysical survey over the area. This was the first time that the method had been used in South African gold prospecting, and the survey led to

the deepening (by only 10 cent) of a borehole, stopped in country rock in the early 1900s, to 2,964 ft., where it cut the Witwatersrand Series.

Income Tops £1,000,000

However, the West Wits line is not merely a chapter, albeit an important one, in the history of the South African industry. This is apparent from Mr. P. S. Hammond's statement to shareholders of West Wits reviewing the year ended June 30, 1957. Although the company's dividend income from the five mines in the area has now exceeded £1,000,000 for the first time, West Wits continues to investigate anomalies and unconformities, notably in the area to the west of Doornfontein, where 4,876 ft. were drilled last year.

Mr. Hammond again had hard words to say, both on the "extra burden which gold mining taxation imposes as compared with the taxation of companies in other industries", and on inflation which, he said, was a strong deterrent to new enterprise. In support of this last contention, Mr. Hammond cited J.C.I.'s decision on the flotation of the potentially promising area south of Randfontein, which was deferred specifically on the grounds of the unknown effect of inflation on estimates of capital expenditure and future working costs.

Progress of the Mines

The five West Wits Line producers, of which all save Blyvoor are under Gold Fields' management, continue to progress most satisfactorily, as is apparent from their reports for the same period. At Blyvoortuizicht, managed by Rand Mines, attention for the past few years has been focused on development. This year's results, in terms of values are the best since the company's "wonder mine" days, the average being 940 in. dwt. against 764 in. dwt. last year. Percentage payability, however, fell away from 95 to 89. It appears that the better values stem, in the main, from development in the lower eastern and central sectors of the mine, but the western portion continues to disappoint.

Development experience at Doornfontein was somewhat similar, with values moving up 120 in. dwt. to 512 in. dwt. and payability declining from 93 to 91 per cent, but more interesting here are the mine's expansion plans, which resulted in an increase in throughput of almost 50 per cent to 931,000 tons. This resulted in a substantial improvement in profits, and made possible the payment of a maiden 6d. in June. Exploratory work has given encouraging results on the Carbon Leader in the west of the mine, but insufficient information is as yet available on the Main Reef to assume that this also may be an economic horizon on this property.

Venterspost is both the oldest and the most easterly of the West Wits producers. Here, the increase in dividends is overshadowed by a further decline in ore reserve tonnage, but the consulting engineers say that the development footage accomplished is not fully reflected in the ore reserves, since raise connections have yet to be made over an abnormally large footage. No. 1 sub-vertical shaft is now in full commission, and preparatory work on the No. 3 sub-vertical has been resumed.

Dividends from Libanon were maintained at 7d. for the year, and no increase can be expected while capital expenditure runs at its present level of over 60 per cent of net profits. This

heavy drain is due mainly to shaft-sinking and equipping at the No. 1 sub-vertical and Harvie-Watt shafts. The first of these is approaching completion, while the Harvie-Watt will be commissioned some time in 1962.

West Driefontein has come to be regarded as the showpiece of the West Wits line, if not of the Rand, by virtue of its almost immaculate 100 per cent record in payability, and of its mill grade which, at around 19 dwt., is the highest in South Africa. West Drie's dividends were again increased during the year (from 5s. 3d. to 6s. 3d.), but, as at Libanon, capital expenditure is a limiting factor. This charge, at present running at something more than £2,000,000 per annum, is expected to continue for some time yet. The expenditure is necessary for two main reasons—shaft-sinking and pumping. More hoisting capacity is essential, because the high degree of sorting practised at the mine involves hoisting 100,000 tons for every 50,000 milled, and the plant capacity is already ahead of the milling rate. Work has therefore been pushed ahead as fast as possible on two new shafts, No. 3, completed this year, and No. 5, which is now at 4,331 ft. The need for additional pumping capacity as workings expand is, of course, self-explanatory—especially in view of the water-bearing ground at West Drie.

Western Deep Levels, the ultra-deep mine floated by Anglo American and others to exploit the ground south of West Drie, and Blyvoort is, at present, something of an unknown quantity. Both of the new mines' northerly neighbours will have sizeable interests in the flotation, and West Wit Areas' direct and indirect participation amounts to some 11 per cent. All told, it seems that West Wit shareholders will be able to subscribe for about 1,067,000 "A" shares out of a total of 5,600,000 to be issued, but it would need a brave man to put a value on these rights at the moment.

West Wits portfolio was reviewed in these columns on November 15.

ANGLO'S BIG ISSUE

The formal offer of £6,000,000 of 6 per cent convertible notes by the Anglo American Corporation has now been made. As has been previously noted in

these columns, it is understood that half the issue has been subscribed firm by South African institutional investors, but the remaining £3,000,000 is available for subscription by the general public.

The list of uses for which the loan is being raised makes impressive reading. It includes the expansion of present interests in the Transvaal and O.F.S. (including the extremely costly Western Deep flotation); prospecting and development in Tanganyika, Natal and South-West Africa; copper, iron and steel in Rhodesia and timber in Swaziland; and merchant banking and financing in the Union and in the Rhodesias.

In view of the asset value (£83,000,000) and the high market standing of the corporation, the issue is sure to be successful, although it is felt in some quarters that 99 per cent is a little high for a 6 per cent issue in this country at the present time.

LAKE GEORGE'S MISFORTUNES

There could conceivably be some significance in the rather ironic fact that Lake George, the Australian lead and zinc producer, went untroubled by labour disputes in the year to June 30 last at the very time when the fall in the metal prices was dealing profits a mortal blow. In recent years it has been prolonged strikes that have been mainly responsible for the remarkable fluctuations in the company's fortunes. Now Lake George is once again out of the dividend list compared with a 30 per cent payment for 1955-56. The year's operations were barely self-sufficient, the group profit before tax being a mere £1,023 against £411,942 in the preceding period. This is turned into a loss of £35,879 after taxation. The consolidated balance sheet shows no great deterioration in the liquid position, net liquid assets amounting to £471,117 against £533,081 a year previously.

Just to round off the picture of gloom the report also contains an account of the development position which indicates that the orebodies are tending to peter out at depth, while the existence of new orebodies has yet to be established. It is stated that "efforts are now being con-

RAND, KLERKSDORP AND O.F.S. GOLD AND URANIUM PRODUCERS

Comparison and analysis of results for the first nine months of 1957 and 1956

Heading	Jan. to Sept.	Rand Cos.	Klerksdorp Cos.	O.F.S. Cos.	Total
Tons milled : Millions	1957 1956	38.1 41.1	4.5 3.0	7.3 7.0	49.9 51.1
Ounces produced : Millions	1957 1956	8.4 8.6	1.6 1.0	2.8 2.3	12.8 11.9
Grade per ton : Dwt.	1957 1956	4.2 4.0	7.3 6.4	7.6 6.6	5.0 4.5
Working costs per ton : s.d.	1957 1956	42/1 40/-	52/6 50/4	56/2 52/11	45/1 42/4
Working profits : Gold £m.	1957 1956	19.8 20.8	8.8 4.5	14.5 10.6	43.1 35.9
Working profits : Uranium £m.	1957 1956	13.5 11.6	6.3 2.9	4.6 3.2	24.4 17.7
Total working profits : £m.	1957 1956	33.3 32.4	15.1 7.4	19.1 13.8	67.5 53.6
Dividends declared : £m.	1957 1956	9.6 9.6	3.0 1.3	9.4 5.8	22.0 16.7
Number of Companies included	1957 1956	37 40	7 6	10 11	54 57

centred on an energetic programme of cross-cutting and drilling directed to discovering new ore below the existing mine".

Since the end of June there has been a further relapse in the price of lead and zinc. It is thus a fair conclusion that Lake George is now in the red. The 5s. shares have dropped to 5s. 6d., less than half of what they were earlier this year. At this level the holder may well decide that his shares could be very sensitive to any rally in metal values and that it may thus be worthwhile hanging on. The Hon. R. M. P. Preston's speech at the meeting on January 7, 1958, should be of vital interest.

KAFFIR DIVIDEND SEASON OPENS

The opening of the half-yearly Kaffir dividend season was marked by an unexpectedly large jump in the distribution by Vaal Reefs, the Klerksdorp gold and

uranium producer. A comparative table of payments by the companies in the Anglo American group appears below.

Mine	June 1956	Dec. s. d.	June 1956	Dec. s. d.	June 1957	Dec. s. d.
Brakpan	4½	6	4½	4½	4½	4½
Dagga	2	9	2	9	2	9
E. Dagga	9	9	9	9	9	9
S.A. Lands	1	6	1	6	1	6
Springs	2½	3	—	—	4½	4½
Vaal Rfs.	—	1	0	1	3	2
W. Rfs.	1	3	1	3	1	3

Transvaal and Delagoa Bay Earn More.—Net profits of Transvaal and Delagoa Bay, parent company of the Douglas Colliery, were £234,949 in the year ended August 31, an increase from £215,395 in the preceding year. Dividends declared during the year totalled 11s. per share, absorbing £198,413 (1956: same), and, after transferring £35,000 to reserve, the carry-forward is increased by

£1,536 to £15,570. Meeting, Johannesburg, December 23. Mr. B. L. Blaine is chairman.

Poor Values at Rahman Property.—In the year ended June 30, 1957, Rahman Hydraulic Tin made a loss of 54,031 Malayan dollars against a profit last year of \$27,723. The chairman, Mr. J. G. Brown, says that although the grade realized at the mill was somewhat better, this was almost certainly due to greater efficiency in recovery, since the grade of ground mined was both lower and inconsistent. Meeting, Penang, today.

Coronation Syndicate Maintains Dividend.—Coronation Syndicate are to repeat last year's 22½ per cent for the year ended June 30, 1957. Group profits attributable to members in that period were £120,695 after taxation of £39,254, against £106,599 after £44,559 last year. Meeting: Johannesburg, December 23.

Rand Selection Pay More.—A recommended final of 1s. 6d. from Rand Selection Corporation for the year ended September 30 last makes a total of 2s. 6d. for the year, against 2s. 3d. in the preceding period. Estimated profits after taxation are £1,073,000 against £1,022,889.

S.A. Townships Double Profits.—S.A. Townships, Mining and Finance made an estimated taxed profit of £180,000 in the year to September 30, 1957. This compares with £74,428 in 1956. The dividend recommended is also doubled at 6d.

Miami Feels The Draught.—Figures for the first nine months of 1957 released by the Miami Copper Company reveal a depressingly familiar picture. Net income totalled \$2,262,200 against \$7,080,700 in the same period of last year, which, in per share terms, is \$3.04 against \$9.53. The usual quarterly of 50c. will be paid on December 17.

Rhodesia Monteleo.—In the year ended June 30, 1957, excess of revenue over expenditure by Rhodesia Monteleo Asbestos was £23, reducing the debit balance carried forward to £69,203. The mine continues on care and maintenance. Meeting, Salisbury (Rhodesia), December 17.

Kolar Distributions.—Champion Reef and Nundydroog, both in liquidation since the nationalization of the Kolar Gold Mines, have announced further distributions. Champion Reefs are paying 6d. per unit, making 15s. 4d. so far, and Nundydroog 9d., making 21s. 6d. It is anticipated that any further payment will be quite small.

Rio Tinto's Successful Issue.—Rio Tinto announce that acceptances of their recent "rights" issue totalled over 98 per cent.

THE BOARD OF TRADE has for disposal, ex store at Riddington, near Nottingham, approximately 50 tons of Calcium Silicide (Lumpy). The material is packed in drums and is offered as it lies, loaded to purchaser's road vehicles. Full particulars and Forms of Tender (returnable by December 17, 1957) may be obtained on application to the Board of Trade, General Division, Room 301, Laco House, Theobalds Road, London, W.C.1 (telephone No. Chancery 4411, ext. 295 or 310).

Rand & Orange Free State Returns for November

Company	November 1957			Year ends	Current Financial Year			Last Financial Year		
	Tons (000)	Yield (oz.)	Profit† (£'000)		Tons (000)	Yield (oz.)	Profit† (£'000)	Tons (000)	Yield (oz.)	Profit† (£'000)
Goldfields										
Doornfontein	86	35,909	285.6	J	428	176,364	1027.4	368	145,518	655.6
Libanon	103	23,022	53.1	J	603	114,731	266.6	482	107,753	273.4
Luipaards Vlei	72	12,824	4.2	J	370	65,748	46.6	423	75,702	53.7
Rietfontein	24	5,557	15.5	D	265	62,108	177.2	342	64,267	195.0
Robinson	75	15,900	9.0	D	834	171,558	108.0	847	170,891	50.5
Simmer & Jack	96	17,994	18.9	D	1,058	196,232	206.7	1,118	196,966	194.5
Sub Nigel	66	16,708	27.7	J	330	83,982	140.0	332	86,182	280.3
Venterspost	120	29,028	51.4	J	615	147,778	287.5	622	137,535	341.5
Vlakfontein	49	17,425	84.2	D	543	194,530	937.2	496	177,530	878.4
Vogels	95	22,637	50.0	D	1,087	250,925	754.8	1,103	272,214	850.4
West Drie	75	71,993	591.2	J	375	359,277	3049.0	375	348,681	2879.7
Anglo American										
Brakpan	127	18,544	11.6	D	1,223	201,852	144.4	1,175	207,317	137.7
Daggas	221	47,081	250.0	D	2,498	544,173	2968.5	2,425	547,824	3092.3
East Daggas	92	15,327	31.7	D	1,037	171,806	375.6	93	171,858	368.5
F. S. Geduld	64	45,149	312.1	S	128	89,959	622.2	93	42,188	185.9
Lorraine	61	11,935	112.0	S	122	24,087	120.8	119	22,590	116.6
President Brand	68	51,900	414.0	S	139	105,110	844.1	121	92,578	764.8
President Steyn	92	35,162	190.8	S	186	70,885	387.0	175	67,830	399.7
S. A. Lands	86	17,458	49.4	D	966	206,875	655.6	986	208,439	725.3
Springs	127	14,326	9.1	D	1,393	153,140	75.6	1,388	167,417	110.7
Vaal Reefs	68	30,642	181.6	D	683	302,668	1796.6	346	288,683	623.6
Welkom	81	24,138	64.4	S	163	48,477	128.4	167	41,312	84.9
Western Holdings	99	50,428	369.1	S	1,040	100,863	739.2	176	78,081	505.1
Western Reef Ex.	117	27,070	71.7	D	1,337	314,354	727.4	1,318	368,901	549.3
Central Mining										
Blyvoor	102	61,176	434.9	J	524	312,948	2255.0	535	300,320	2212.8
City Deep	149	28,300	10.2	D	1,641	320,706	169.8	1,695	327,508	54.5
Cons. M.R.	140	21,828	8.5	J	890	116,168	47.4	835	115,743	48.3
Crown	225	34,197	15.9	D	2,614	383,054	30.7	3,128	441,816	206.1
D. Roodepoort	181	32,565	51.3	D	2,214	355,101	566.4	2,012	347,787	581.2
East Rand Prop.	218	56,390	135.8	D	2,420	618,679	1454.4	2,335	607,186	1968.8
Harmony	81	32,404	158.4	J	423	168,214	867.1	391	153,333	838.0
Modder East	130	13,534	2.0	J	697	70,352	16.1	702	72,133	44.2
Rose Deep	54	7,424	1.1	D	554	82,819	5.8	488	77,833	5.2
J.C.I.*										
E. Champ d'Or	12	382	L27.1	D	133	3,783	L291.4	150	8,436	L294.5
Freddies Cons.	50	17,945	L9.0	D	616	175,258	L165.2	676	138,443	L382.6
Govt. G.M.A.	60	10,032	1.0	D	1,017	172,381	L60.8	2,567	329,143	16.8
Randfontein	30	4,096	6.2	D	684	113,344	93.2	2,481	246,858	L3343.4
Union										
East Geduld	127	39,055	272.8	D	1,495	459,140	3232.3	1,588	489,818	3511.0
Geduld Prop.	83	13,164	12.4	D	1,061	168,147	250.3	1,144	181,351	350.8
Grootvlei	198	42,262	217.4	D	2,161	461,988	2430.4	2,154	464,052	2532.7
Marievale	72	18,906	84.4	D	785	206,084	926.0	785	206,114	954.8
St. Helena	115	33,458	181.7	D	1,280	372,832	2053.7	1,198	347,587	1897.9
Van Dyk	73	14,047	30.0	D	848	149,402	216.0	878	142,308	18.9
General Mining										
Buffelsfontein	110	35,752	178.2	J	556	180,478	985.7	—	—	—
Ellaton	32	7,339	29.0	D	357	78,091	225.1	353	80,499	290.0
S. Roodepoort	29	6,872	28.8	J	149	34,750	127.3	146	33,845	124.5
Stilfontein	108	53,034	367.7	D	1,124	511,980	3354.9	986	389,750	2304.0
West Rand Cons.	129	17,981	2.8	D	1,544	220,997	148.6	2,365	260,179	L1042.4
Anglo-Transvaal										
Hartbeesfontein	85	44,625	275.9	J	429	235,115	1585.3	345	166,278	1011.1
N. Klerksdorp	11	1,264	L5.9	D	128	13,467	L65.3	120	13,588	L58.3
Rand Leases	168	25,452	6.2	J	882	134,217	56.0	884	136,612	33.5
Village M.R.	34	5,607	7.5	J	168	27,665	33.6	166	25,637	43.3
Virginia O.F.S.	101	26,361	60.3	J	505	134,841	350.2	446	86,817	274.2
Others										
N. Kleinfontein	93	11,737	0.5	D	1,082	128,682	43.5	1,139	134,629	10.1
Wit. Nigel	18	4,294	7.1	J	89	21,278	19.2	90	19,929	37.0

Gold has been valued at 249s. (October 249s. 3d.) per oz. fine. L indicates loss. †Working Profit.

*Working Profit includes sundry revenue. Table excludes profits from Uranium, Pyrite and Acid, and also production from Uranium divisions at Luipaards Vlei, Randfontein and W. Rand Consolidated.

NEW UNION GOLDFIELDS, LIMITED

(Incorporated in the Union of South Africa)

STATEMENT BY THE CHAIRMAN

The Nineteenth Annual General Meeting of New Union Goldfields, Limited, will be held on December 11 at Johannesburg. An abridged version of the Statement by the Chairman, Mr. M. E. Rich, which was circulated with the Accounts for the year ended June 30, 1957, follows:—

Profits, Appropriations and Reserves

Our total revenue for the year amounted to £186,700, compared with £272,100 in the previous year, the reduction being mainly accounted for by the inclusion in the 1956 figures of two non-recurring revenue items totalling £84,800. Income from investments rose from £108,500 to £119,700, while share-dealing profits declined from £56,600 to £46,400, and interest payable increased by £4,500 to £27,700. The net cost of administration services increased very substantially by £40,800 to £64,200. Rent of our new premises and depreciation together accounted for £21,200 of the increase, and miscellaneous non-recurring items for a further £13,000. There will certainly be a considerable improvement under this heading during the current financial year with the disappearance of the non-recurring items and the recent introduction of certain internal economies. The profit for the year, before providing for taxation or for diminution in the value of investments, was £94,800 compared with £225,500 in 1956.

Quoted investments have again been valued at the lower of cost or Stock Exchange value, and unquoted holdings at the lower of cost or Directors' valuation. On this basis there was a net diminution in the value of all our shareholdings at June 30, 1957, of £172,400, for which full provision has been made.

During the year, we drew on our Revenue Reserves to the extent of £99,200, being £24,300 to cover expenditure of an exploratory nature, and £74,900 to bridge the gap between investment depreciation on the one hand and realized profits from all sources, after taxation, on the other. The total of our reserves amounted at the year-end to £484,000.

Investments and Liquid Position

At June 30, 1957, the book value of our quoted investments was £2,029,300 (1956, £2,192,600), compared with a market value of £2,146,400 (1956, £2,452,300). The decrease of £163,300 in book values was more than accounted for by the provision of £171,200 to cover diminution in value of holdings. During the year, we increased our investments in Free State Saaiplaas Gold Mining Company, and in several of the gold-cum-uranium producing mines operating in the Klerksdorp area, and acquired a sizeable stake in the newly floated Riebeek Gold Mining Company, Limited, in the Orange Free State. Against these acquisitions, we disposed of our holding in Central Mining Free State Areas, Limited, and substantially reduced our investment in General Exploration Orange Free State, Limited. We again received dividends totalling 2s. 6d. per share on our Dominion Reefs holding. We are particularly interested in Harmony Gold Mining Company, both through our direct holding, which at October 18, 1957, had a market value of £446,000, and through our associated financial companies, New Wits, and

Lydenburg Gold Farms, whose Harmony holdings at market value on the same date totalled approximately £799,000. Producing mines on the Witwatersrand in which our Company, through indirect holdings, continues to be substantially invested, are Blyvooruitzicht, West Driefontein, and Village Main Reef. We are also directly and indirectly interested in the developing Winkelhaak Mine.

With regard to future mining investments, we are interested through Witwatersrand Deep, Limited, and other companies in the major new gold mining company which, since the close of the year, has been launched under the name of Western Deep Levels, Limited. We also participate in certain portions of the Kinross area on the Far East Rand lying outside the Winkelhaak lease area, and in a portion of the "J.C.I. Western Areas Prospect" on the West Rand. Our own small mines, Star Diamonds and Vellefontein Tin, have again experienced reasonably satisfactory years, but Union Tin Mines encountered some serious operational difficulties from which it is only now beginning to emerge. After a lapse of several years, Transvaal Asbestos, Limited, re-entered the dividend-paying list with a declaration of 5 per cent. Coal and base mineral shareholdings still represent a very small percentage of our Group's total investments, and we shall continue our policy of gradually increasing this percentage as time goes on, but obviously in the face of present uncertainties this policy will only be pursued when the time is considered right.

Our principal real estate interests still consist of Reservoir Hills Township, in the Durban municipal area, and Greystone Park, a suburb of Salisbury, Southern Rhodesia. Development and sales progress during the year at each of the townships was satisfactory.

Our industrial and farming investments remained substantially unchanged during the year, and include our four major direct and indirect holdings in Distins-Sagseeds, Limited (seed growing, cleaning and trading); New Vaal Farms, Limited (ranching and lucerne); P. J. Joubert, Limited (wine and spirit trade); and Silverton Tannery, Limited (leather industry). Our Group investment in these four companies in shares and loans amounted at June 30, 1957, to £583,000. Although the Distins-Sagseeds and New Vaal Companies again incurred losses, the latter company is still very much in the developing stage, and it is hoped that ultimately it will prove to be a satisfactory investment. The Silverton Tannery profit was reduced as the result of difficult conditions in the tanning industry, but it maintained its dividend rate of 12½ per cent.

During the year we reduced our Current Liabilities and Loans from Subsidiaries by £11,500 to £551,200, while our Current Assets declined by £173,300 to £269,700. Thus, over the period, the deterioration in our net liquid position amounted to £161,800.

Exploration and New Interests

Our drilling programme on certain farms in the Carolina district, Eastern Transvaal, constituting a composite area of 7,600 morgen, was completed with the proving of a deposit of some 62,000,000

tons of extractable coal of good household and industrial grade over a seam width of approximately 72 in. The option to purchase these coal rights was accordingly exercised. The option embraced the coal rights of certain other farms totalling 32,000 morgen, and constituting several composite blocks of ground, and these rights were also acquired. Coal is believed to underlie several of these additional farms, and their potentialities will be examined in due course. The entire cost of acquisition, including the costs of drilling the Carolina Block, amounted to £68,000. We are now considering the practicability of opening up our own colliery on the Carolina Block in the light of the controlled price of coal, the high capital costs involved, and the railway truck position.

Our drilling of the Glenover Phosphate deposit on the farm Glenover No. 43, 65 miles north-west of Thabazimbi, Northern Transvaal, was also completed during the year. Here we have proved a deposit estimated to contain at least 2,000,000 tons of ore with an average phosphorous pentoxide content of approximately 30 per cent. Ways and means of turning this deposit to account are also being investigated and, as an interim measure, arrangements have been made to supply African Metals Corporation with approximately 1,000 tons of ore per month over the next five years for use in the manufacture of edible phosphates. The first consignment of this phosphate rock was made early in September.

Conclusion

Our results for the past year have indeed been very disappointing. However, the analysis of the Accounts reveals that there has been no basic deterioration in the affairs of our Company, but rather a slowing up in the progress of rehabilitation.

Through its share portfolio, our Company's fortunes have for many years been closely linked to those of the newer gold mines, and a diverse number of other propositions which have required to be developed from the initial stages. In order to follow up these investments, we have had to expend a substantial amount of money and, due to the fact that stock market conditions have not been in our favour, our cash resources have become strained, but I am glad to say that our liquid position has improved quite considerably since the year-end.

I am much inclined to the view that we have now passed through the worst of this difficult period. In the first place our dividend revenue from the young gold producers will certainly continue to increase, but I would emphasize that, since many of our large interests in these mines are held through our associated companies, we cannot receive the full benefit of the higher dividends immediately, for the reason that improvements therefrom in the earnings of the associated companies are not normally passed on in the same year. Secondly, our interests in developing townships and existing small mine propositions should call for less financing in the future, and thirdly, having absorbed nearly £700,000 of investment depreciation over the past two years, our holdings are now written down to an extremely conservative level; therefore, unless anything completely unforeseen happens as a consequence of sudden changes in world economic or political conditions, which might cause a serious stock market setback, we

should not have to utilize our profits or draw from our reserves to absorb investment depreciation in the future on the same scale as we have had to do in the past.

We will probably have to contend with further setbacks from time to time for one reason or another, but viewing the position at this stage, I feel reasonably confident that our results for the current financial year will be decidedly better than those which have been presented for the year just ended.

SOUTH ROODEPOORT MAIN REEF AREAS, LIMITED

(Incorporated in
the Union of South Africa)

REPORT OF THE PROCEEDINGS

The 23rd Annual General Meeting of Shareholders was held on November 19 in the Board Room, 80 Marshall Street, Johannesburg.

Mr. C. S. McLean, the Chairman, referred to the results obtained for the financial year ended June 30, 1957, and stated that the tonnage milled at 340,000 tons, an increase of 16,000 tons on the previous year, produced 80,820 oz. fine of gold, representing an average recovery of 4.67 dwt. per ton milled. The total revenue was £1,033,247, whilst working expenditure amounted to £728,481, leaving a net profit of £304,766, which was an increase of £27,419 over the previous year. Appropriations for Taxation and Capital Expenditure totalled £151,019 and Dividends Nos. 30 and 31 absorbed £159,824. The unappropriated balance of profits carried forward was £125,337.

The dividend distributions of 2s. 3d. per share were 3d. per share more than the declarations for the previous year.

The Development footage accomplished during the year was 32,004 ft., of which 14,435 were sampled and 5,755 ft., equivalent to 39.9 per cent, proved payable with an average value of 253 in. dwt.

The Ore Reserves increased by 15,000 tons to 1,125,000 tons with an average value of 4.9 dwt. over 46 in.

Since the end of the financial year, the development accomplished had shown a lower percentage of payability with a higher in. dwt. value, when compared with the results obtained for the corresponding period of the previous year.

Prospecting operations on Portion K of Rietvlei No. 9 adjoining the new lease area were being continued. These operations indicated that the area is very faulted and little development on reef had so far been accomplished.

The Meeting adopted the Directors' Report and the audited Accounts. The retiring Directors were re-elected.

GEOLOGIST REQUIRED with minimum several years' experience to conduct new exploration programme in East Africa. This is an interesting and responsible position with the possibility of permanency and further travel. Interviews will be arranged in London. Applications, please, to the Mining Engineer, Northern Mercantile & Investment Corporation, Ltd., City Wall House, 84-90 Chiswell Street, London, E.C.1.

LONDON AND RHODESIAN MINING AND LAND COMPANY

The Annual General Meeting of London and Rhodesian Mining and Land Company, Limited, was held on November 28 in London.

Sir Joseph Ball, K.B.E. (the Chairman), presided and, in the course of his speech, said:—

The net profit before taxation amounted approximately to £124,000 as compared with £131,000 last year. From this sum falls to be deducted £68,000 in respect of taxation, the comparable figure last year being £76,000, leaving a net profit for the year of £56,000 as compared with last year's figure of £55,000.

Consolidated Accounts: After all charges, including taxation and dividends for the year, the sum to be carried forward amounts to £53,500 as compared with £54,700 brought forward from last year, a decrease of £1,200.

Ranching: Last year I stated that five-year development programmes for both Wiltshire and Lochard had been instituted with the object of increasing the cattle population. As I then pointed out, further improvements in water supplies, fencing, buildings, dips, etc., would be necessary, and substantial progress has already been made in all these directions.

Mazoe Consolidated Mines: After paying the dividend, the unappropriated balance carried forward amounted to £2,394 as compared with £6,551 last year.

Cam & Motor: The Cam & Motor mine produced 97,851 fine oz. of gold for a mine working profit of £470,762. The ore reserves at June 30 last amounted to 1,334,000 tons at a grade of 7.3 dwt.

Pickstone Mine: During the year to

June 30 last, 14,651 fine oz. of gold were produced for a working profit of £1,951. At June 30, ore reserves totalled 295,440 tons of a grade of 5.5 dwt. as compared with 285,336 tons at 5.6 dwt. in June, 1956.

Arcturus: The Arcturus mine produced 17,750 fine oz. of gold for a working profit of £64,611. The existing ore reserves have been computed at 406,786 tons at a value of 7.3 dwt. as compared with 401,411 at a value of 7.8 dwt. for the previous year, viz. an increase of 5,375 tons and a reduction of 0.5 dwt.

Muriel: At the Muriel mine operations for the year resulted in a mine working profit of £134,455, and ore reserves at 147,430 tons, averaging 11.6 dwt., showed an increase of 14,240 tons over the previous year.

Since the close of the year under review Messrs. Glazer Brothers of Johannesburg made a conditional offer to purchase a proportion of the stock units of the Company. In addition to the reasons for non-acceptance set out in the Company's letter of July 31 last, I would now point out that Messrs. Glazer Brothers' conditional offer being in respect of a comparatively small majority of the shares only, its acceptance would have resulted in a very large minority being left at the mercy of the majority shareholders. Your Directors and certain other large shareholders with whom they were necessarily in close touch regarded this, from the very first, as a fatal objection to acceptance, apart altogether from the other considerations set out in the circular letters issued by the Board. The report was adopted.

Publications Received

The British Standard Institution's *Annual Report* for the year ended March 31, 1957, takes the form of a book of some 270 pages in which the progress of standards is reviewed, mainly under the headings of the approximately 60 major industries served by the B.S.I. The published price of the work is 7s. 6d., and it is available from the Sales Branch, B.S.I.

*

The considerable advances made in the development of welding techniques for aluminium, especially over the last few years, emphasize the need for guidance in the matter of testing. Accordingly, the appropriate technical committee of the Aluminium Development Association has prepared *Recommendations for the Testing of Aluminium Fusion Welds and Welders*, intended to meet the needs of authorities who have cause to test welds and approve welders engaged on the fabrication of aluminium.

The first section of the booklet deals with current testing methods, as divided between non-destructive and destructive tests, and continues with notes on the applications of these methods to butt-welds and fillet-welds in aluminium. Illustrations are given of appropriate test specimens. The second section describes the making of test welds, and it is noted that the welder should be tested, as far as possible, on the gauges and compositions of material with which he will be finally concerned.

Finally, there is a list of defects occurring in welds made by the principal

methods, and here, considerable care has been taken to distinguish, as appropriate, between defects due to negligence or inefficiency of the welder, and defects inherent to the process itself.

The Sedimentary Petrology of the Mississagi Quartzite in the Blind River Area, by J. P. McDowell, is issued as Circular No. 6 by the Ontario Department of Mines. The author points out that similarity in trend of current directions of the Mississagi, as measured in cross-bedding and ripple marking, and the trends of orebodies as outlined by drilling, suggest that the two trends are related. If these trends are genetically related, then this is strong evidence of a syngenetic origin of the ore. The report is well illustrated by maps and half-tones.

Results of a U.S. Bureau of Mines study of dust conditions in a group of American bituminous-coal mines are presented in a technical report released by the Department of the Interior.

The quantity of airborne dust to which certain workers were exposed in nine coal mines was determined. In addition, the effectiveness of measures taken to control dust was appraised. A copy of the report, R.I. 5361, *Full-Shift Dust Exposure in some Bituminous Coal Mines*, can be obtained from the Bureau of Mines, Publications Distribution Section, 4800 Forbes Street, Pittsburgh 13, Pennsylvania.

